



RICHARD C. SLADE & ASSOCIATES

CONSULTING GROUNDWATER GEOLOGISTS

## SUMMARY OF OPERATIONS

DESTRUCTION OF TWO WATER-SUPPLY WELLS  
BOEING REALTY CORPORATION C-6 FACILITY  
LOS ANGELES, CALIFORNIA

Prepared for:

Integrated Environmental Services, Inc.

Prepared by:

Richard C. Slade & Associates  
Consulting Groundwater Geologists  
North Hollywood, California

RCS Job No. S9808

September 1998



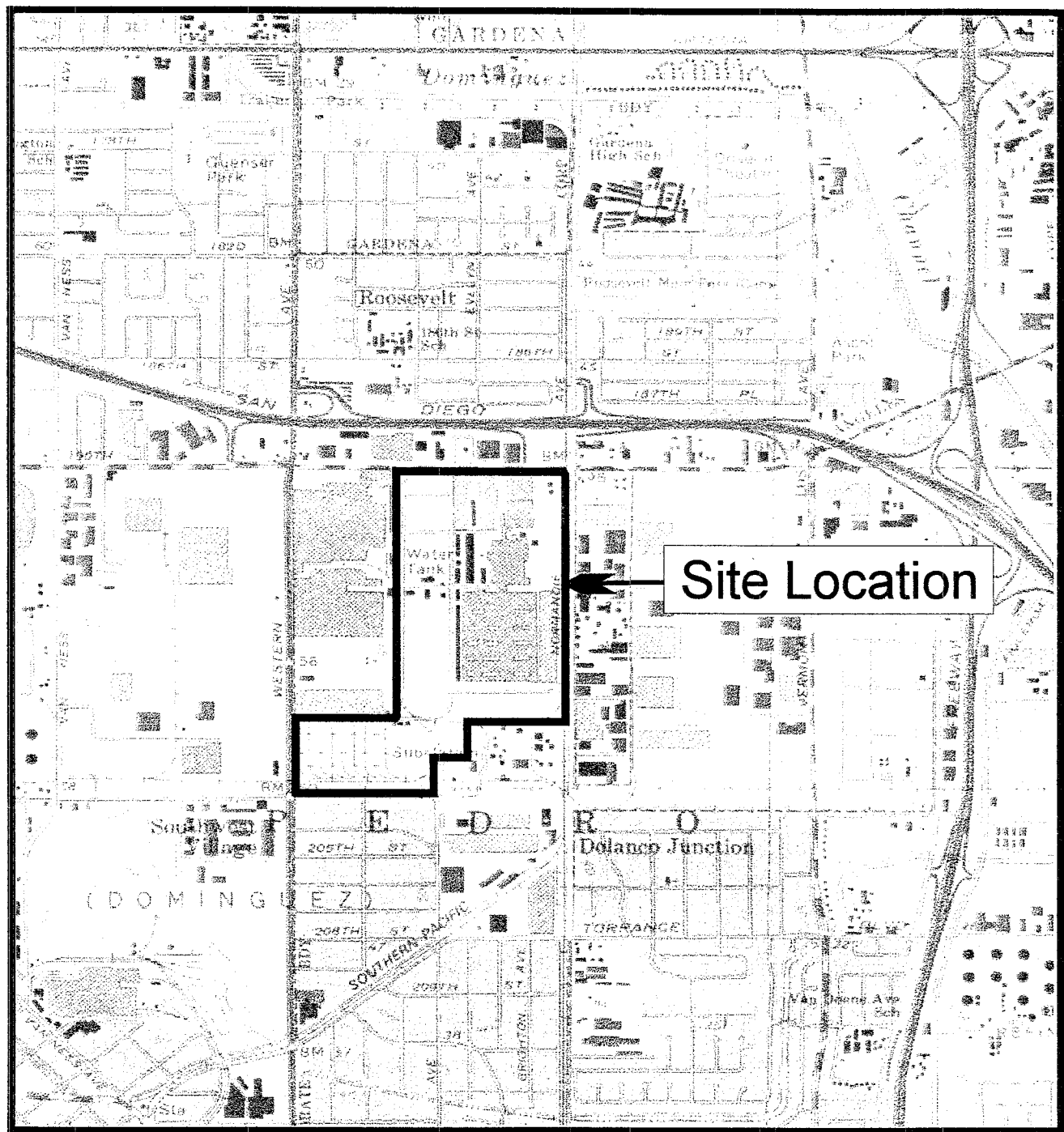
## INTRODUCTION

This Summary of Operations report has been prepared to document procedures and methods used in the destruction of two former water-supply wells at the Boeing Realty Corporation (BRC) C-6 Facility. This facility, as seen on Figure 1 - Site Location Map - is located on the southwest corner of the intersection of 190th Street and Normandie Avenue, in the City of Los Angeles, California. Figure 2 -Well Location Map- illustrates the approximate location of the two water-supply wells at the facility.

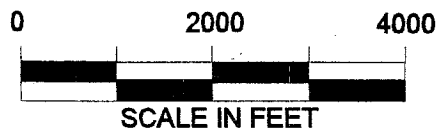
Beylik Drilling Company (Beylik) of La Habra, California was the contractor that performed the actual well destruction work. Richard C. Slade & Associates, Consulting Groundwater Geologists (RCS) prepared the guidelines for destruction of the wells, and was present to monitor and observe the well destruction work at certain tasks, as herein described. RCS personnel also maintained liaison with Beylik personnel and Integrated Environmental Services, Inc. (IES) personnel (primarily Mr. Chris Stoker) during each work task to provide in-progress information on the well destruction work. The California Regional Water Quality Control Board (CRWQCB) was also apprised by IES of events during destruction of the wells.

All destruction procedures were performed based on an RCS Workplan June 1998 and were conducted in accordance with current California Department of Water Resources (DWR) well standards as outlined in DWR Bulletin 74-81 and its supplement DWR Bulletin 74-90. Prior to destruction, a Los Angeles County Department of Health Services (LACDHS) Well Destruction Permit was obtained by Beylik .

During work on the well destruction project, addenda to the original Workplan and other correspondence were submitted by RCS to IES personnel, based on conversations with IES personnel and based on RCS observations. Appendix I includes the addenda and correspondence submitted to IES personnel that outline the minor changes to the original Workplan and also provides the RCS final recommendations regarding destruction operations of the two wells.



Base Map: USGS 7.5-minute Torrance Topographic Quadrangle

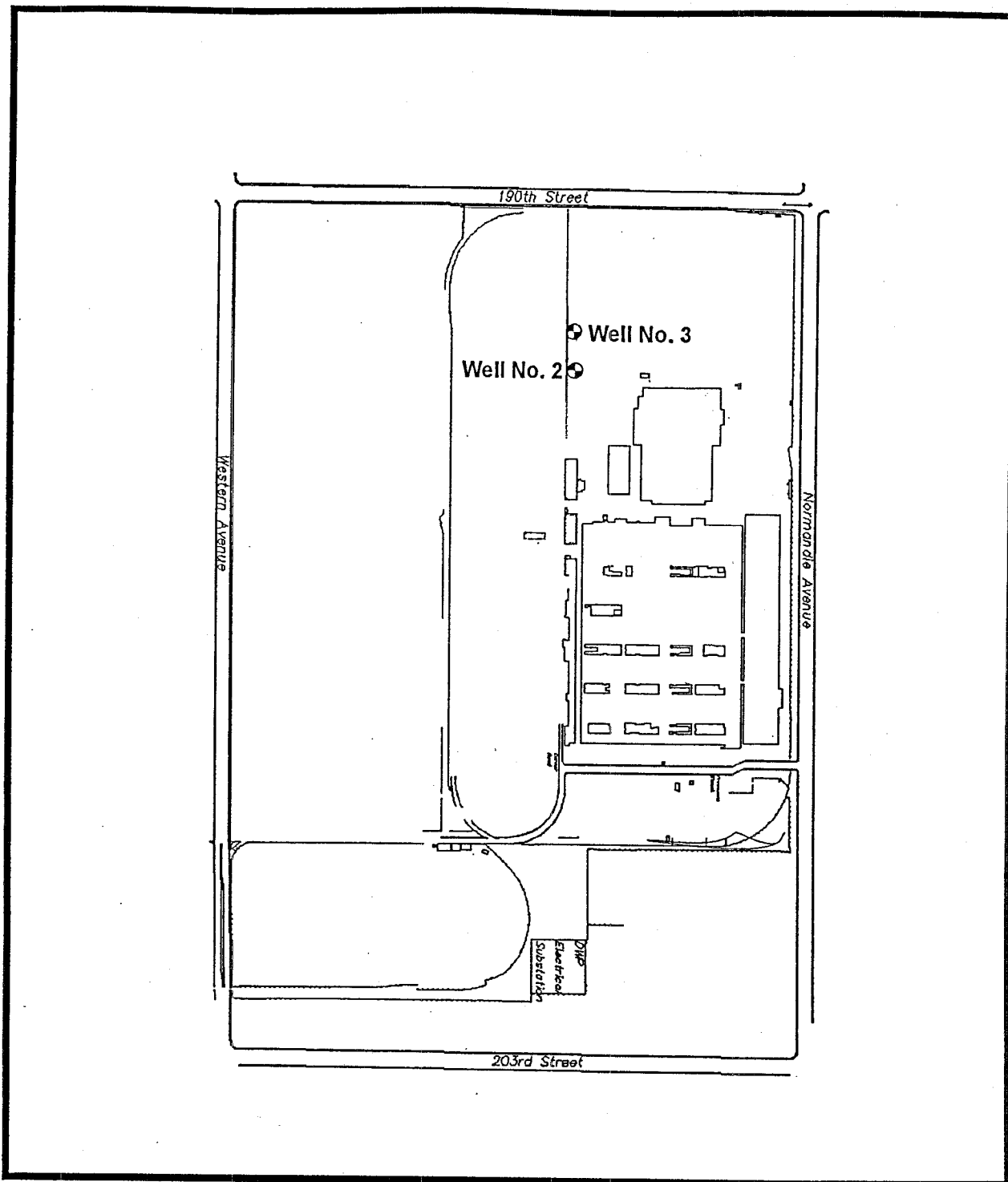


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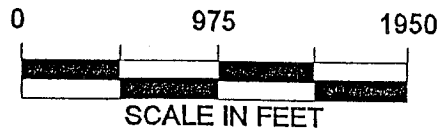
**FIGURE 1**  
**SITE LOCATION MAP**  
**BOEING REALTY COMPANY C-6 FACILITY**

RCS JOB NO. S9808

SEPTEMBER 1998



Base Map Modified from Integrated Environmental Services, Inc.



**RICHARD C. SLADE & ASSOCIATES**  
CONSULTING GROUNDWATER GEOLOGISTS

**FIGURE 2**  
**WELL LOCATION MAP**  
**BOEING REALTY COMPANY C-6 FACILITY**

RCS JOB NO. S9808

SEPTEMBER 1998



### BACKGROUND INFORMATION

Available information reveals that initially three water-supply wells, Nos. 1 through 3, were constructed at the subject site in the mid-1940's. According to Los Angeles County Department of Public Works, Flood Control District (LACFCD) data, the three wells are/were designated as follows:

Owner Well Number	LACFCD Number	U.S. Geological Survey Number	California Department of Water Resources Number
1	794A	T4S/R14W-1H1	T4S/R14W-1F1
2	794B	T4S/R14W-1H2	T4S/R14W-1F2
3	794C	T4S/R14W-1H3	T4S/R14W-1F3

Well No. 1 reportedly no longer exists at the site, and there are no records to document when and how Well No. 1 was destroyed. The remaining two wells (Nos. 2 and 3) had not been used in many years but were still equipped with deep well turbine pumps.

Original driller's logs reveal that Well Nos. 2 and 3 were drilled for the Aluminum Corporation of America (ALCOA) between July and September 1942. The wells were drilled by the Roscoe Moss Company, most likely by the cable tool drilling method. The following table shows the construction parameters of each well, as documented in the original driller's logs.

Well Number	Depth (ft, bgs)	Diameter of Steel Casing (inches)	Perforation Intervals (ft, bgs)
2	600	14	477-506 525-530 535-540
3	600	14	427-433 478-516 538-550



The perforations in each well were generally 5/16 inches in width and were 1-3/14 inches in length. A copy of the original driller's log for both wells is included in Appendix 2.

### WELL DESTRUCTION PROCEDURES

The following work items were conducted during the destruction of each well.

#### 1. Pump Removal

The existing well pump components (the turbine drive head, pump column, and pump bowls) in each well were removed by Beylik. Pump removal was performed utilizing an overhead lift to vertically extract the pump components from each well. During removal, the pump column in each well was torch-cut in lengths of 10 ft as the pump was removed from each well. After removal from each well, all pump components were left onsite for disposal by BRC; these components, due to their age, had no salvage value.

The pump from Well No. 3 was removed on July 6 and 7, 1998. Fourteen sections of 10-inch-OD, 10-ft-long pump column, one section of 4-foot-long column, and one section of 6-foot-long column were removed from this well. The underlying pump bowl assembly was approximately 11½ ft long, consisting of 15 stages (each stage was approximately 8 inches long). A 10-foot-long suction pipe with a 3-foot-long strainer were below the bottom of the bowls, and these lengths brought the original total depth of the pump intake in the well to approximately 174 feet.

The pump from Well No. 2 was removed on July 22 and 23, 1998. Seven sections of 7-inch-OD, 20-ft-long pump column were removed from the well. The pump bowl assembly was approximately 12 ft long, consisting of 16 stages (each stage being approximately 8 inches long). A 5-foot-long tail pipe brought the original total depth of the pump intake in the well to approximately 157 feet.

#### 2. Flocculation of Water in Casing

To prepare the water in the well casing for video surveying in each well, a flocculent was used to remove and/or settle suspended material in the fluid column in the well. The



flocculent used consisted of a lime-water mixture prepared at the surface. This inert mixture was poured directly down each well and thereafter the well was allowed to set prior to performing additional work. Following flocculent application, Well No. 3 was allowed to set for a period of 48 hours and Well No. 2 was allowed to set for a 24-hour time period.

### 3. Water Well Video Survey

Following removal of the pump and flocculation of the fluid column, a video log survey was conducted in each well. This video survey used a combination vertical/sidescan color camera to examine and document, on VHS tape, the field of view of the blank and perforated sections of casing during the vertical descent of the camera into each well. The sidescan option was used to examine, at appropriate points and where necessary, the physical condition of the casing and/or perforations.

The video survey in Well No. 3 was performed on July 9, 1998 by Water Well Developers, Inc. of Anaheim, California. The video survey in Well No. 2 was performed on July 23, 1998 by the same company. An RCS geologist was present during each survey to record the casing conditions in each well as observed on the video log. A record of those observations is included in the Appendix.

Observation of the video survey for Well No. 3 revealed that the uppermost perforation intervals differed slightly than those documented in the original driller's log. For instance, top of perforations was observed at a depth of 423 ft bgs. However, the driller's log documents the top of perforations at a depth of 427 ft bgs. At a depth of 483 ft sediment fill was encountered. Thus, the intervals of the remaining perforations between 483 ft and 550 ft bgs could not be confirmed. Because the original depth of the well is 596 ft, the video log shows that approximately 113 ft of sediment fill occurred in the well at the time of the video survey.

Observation of the video survey for Well No. 2 revealed that perforations were generally observed where they are documented to occur on the driller's log of the well. However, due to poor visibility the perforations were difficult to see. Sediment fill occurred at a depth of approximately 544 ft bgs. The driller's log shows that the bottom of the well originally occurred at a depth of 596 ft bgs. Thus, based on the video log approximately 52 ft of sediment fill occurred at the time of the video survey.



#### 4. Bailing and Sampling of Sediment Fill

Following the video survey, each well was found to contain sediment fill in the bottom of the casing. The thickness of this sediment fill was 113 ft in Well No. 3 and 52 ft in Well No. 2. This sediment fill in each well accumulated over time due to pumpage of fine grained formation sand. Such sand pumpage was common in old cable-tool drilled wells in the region due to the irregular size and slope of typical casing perforations and to the fine grained nature of several aquifers in the region.

A limited amount of the sediment fill that had accumulated in the bottom of each well was removed by bailing. This bailing was performed for the purpose of collecting sediment samples from the bottom of each well, which then could be transported to a laboratory for analysis. The objective of the sampling and analysis was to determine if the sediment fill, comprised of native fine-grained materials, could be left in place in each well.

Bailing consisted of lowering a 10-inch-diameter metal bailer equipped with a single bottom end flap to the bottom of each well to capture and lift the collected sample to the surface. After the bailer has been lowered to the bottom of each well, the bailer was repeatedly lowered and raised in short increments to move sediment up into the bailer. The bailer was then brought to the surface and the contents placed into a 290-gallon trough.

Bailing of Well No. 3 was conducted on July 13, 1998 and resulted in the removal of approximately 7 ft of sediment, bringing the total depth of the well to approximately 490 ft. Well No. 2 was bailed on July 24, 1998; approximately, 22 feet of sediment was removed from this well, resulting in a total well depth of approximately 566 feet.

The sediment bailed from the bottom of each well generally consisted of a medium to dark gray, fine- to coarse-grained sand containing minor accessory shell material. This bailed sediment was determined by RCS personnel to be native material.

The sediment samples were submitted to Del Mar Analytical Laboratory in Van Nuys, California, and analyzed for volatile organic compounds (VOCs, by EPA Method 8260), semi-volatile organic compounds (SVOCs, by EPA Method 8270), metals (including Chromium VI), and pH. Copies of the results of laboratory analyses for the sediment samples from each well are included in Appendix 4.





The results of laboratory analysis revealed that sediment from Well No. 3 indicated the presence of only one VOC, chloroform; its reported concentration was 0.0036 milligrams per kilogram (mg/Kg). All other VOCs or SVOCs were reported to be detected at concentrations below their respective laboratory limits in the sediment sample.

However, the Total Threshold Limit Concentration (TTLC) values for three metals, total chromium (Cr), copper (Cu), and nickel (Ni), were detected in the sediment sample from Well No. 3 in concentrations approximately 10 times above their Soluble Threshold Limit Concentration (STLC) values. As a result, those three metals were further analyzed for STLC extraction. The following table summarizes those results:

Metal	TTLC Sample Result (mg/Kg)	TTLC Maximum Limit (mg/Kg)	STLC Sample Result (mg/Kg)	STLC Maximum Limit (mg/Kg)
Cr (total)	97	2500	<0.10	5
Cu	300	2500	1.0	25
Ni	190	2000	0.29	20

The results of that test showed that the detected STLC values for each tested metal were reported to be below their respective STLC values. In addition, chromium VI was reported to be the at laboratory detection limit for that metal.

The metals were not leachable, as shown by the STLC testing. It is suspected that the Cr, Cu, and Ni detected in the original sediment sample may have been due to minor amounts of scale present in the sample (refer to and compare the sample analysis of sediment from Well No. 2, which contained no scale, with well No. 3 which contained scale; see below). This scale may have originated from either the well and/or pump column and was likely knocked off during removal of the pump or during bailing of the sediments. Therefore, the sediment samples from Well No. 3 are considered to be native material, and it was recommended that the



remaining sediment be left in place in the bottom of this well. Approximately 106 ft of sediment fill remained in Well No. 3 prior to final well destruction.

The results of laboratory analysis revealed that bottom sediment in Well No. 2 showed all reported VOC and SVOC concentrations to be below their laboratory detection limits. In addition, all metal concentration values were below their respective TTLC and STLC values. Further, chromium VI was reportedly not detected in the sediment sample.

Thus, the sediment samples from Well No. 2 are considered to be native materials, and it was recommended that the remaining sediment be left in place in the bottom of the well. Approximately 30 ft of sediment fill remained in the well prior to final well destruction.

##### 5. Perforation of Well Casing

Because the depth to uppermost, existing perforations in each well begins at relatively great depths (477 ft and 427 ft in Well Nos. 2 and 3, respectively, based upon driller's logs), and because the video log surveys showed the existing perforations to be at least partially plugged, it was recommended that additional perforations be added to shallower portions of the casing to enable the eventual well grouting to enter additional native materials outside the existing casing. Hence, the upper portion of each casing was perforated with a down-well mechanical perforator tool. Additional perforations were placed within blank casing at depths ranging from 200 ft to 400 ft bgs, in each well as described below. A Mills knife, mechanical perforator was used to perforate the casing. Perforations consisted of 8 cuts per row, with each row being approximately one foot apart.

Well No. 3 was perforated on August 12, 1998 from 450 to 470 ft. Following this, cement grout was installed from 490 ft up to 385 ft bgs (as described in the following section). Then, on August 14, 1998, additional casing perforations were cut from 380 to 385 ft, 310 to 340 ft, 250 to 270 ft, and 200 to 220 ft in this well.

Well No. 2 was perforated on August 19, 1998 from 430 to 460 ft, and then cement grout was installed from 566 ft up to 346 ft bgs (as described in the following section). Then on August 21, 1998, well casing perforations were cut from 310 to 330 ft, 260 to 280 ft, and 210 to 230 ft in this well. Thereafter, cement grout was installed as described below.



6. Well Grouting and Installation of Mushroom Cap

The cement grout for well destruction was 10.3-sack mix sand-cement grout. Cement used for the seal was a standard brand Portland cement conforming to ASTM C150, Type II. There was not more than two parts by weight of sand to one part by weight of cement. The water-cement ratio was about 7 gallons per sack of cement (94 pounds).

The cement grout was injected into the well casing from the bottom upward by means of a temporary grout tremie pipe. Cement grout materials were placed by a positive displacement method using pumping. Grout was placed in each well between perforating the upper and lower zones (as discussed in No. 5 above), resulting in two separate lifts or grout placement.

The first lift in Well No. 3 was placed on August 13, 1998 and consisted of placing  $3\frac{1}{2}$  cubic yards ( $\text{yd}^3$ ) of cement grout. This amount of grout filled the well from 490 ft bgs up to a depth of approximately 385 ft (105 lineal ft of cement grout). After perforating the upper casing zones (*i.e.*, above 385 ft bgs), perforations were placed in the intervals as noted in No. 5 above after which additional grouting was performed. The second lift of cement grout was installed on August 17. Approximately  $10 \text{ yd}^3$  of cement grout were used to fill the casing for this lift from 385 ft up to a depth of 55 ft bgs (330 lineal ft of cement grout). On August 20, 1998, the area around the top of the well casing was excavated using a backhoe. The exposed casing was cut off at a depth of approximately 5 ft bgs, and the cement mushroom cap was installed. Approximately  $6 \text{ yd}^3$  of cement grout were used in the installation of the mushroom cap in Well No. 3. Copies of the cement delivery tickets are included in Appendix 5. After the mushroom cap set, the excavation was backfilled with native earth materials up to the level of adjoining grade.

The first lift in Well No. 2 was placed on August 20, 1998 and consisted of placing  $7 \text{ yd}^3$  of cement grout. This amount of grout filled the well from 566 ft bgs up to a depth of approximately 346 ft (220 lineal ft of cement grout). After grouting, perforations were placed in selected casing intervals above 346 ft bgs, (see depths in previous section), after which additional grouting was performed.

On August 27, 1998, the remaining 4 ft of well was cemented in by Beylik personnel. As a result, the second lift of cement grout in Well No. 2 was installed on August 24, 1998. Approximately  $16 \text{ yd}^3$  of cement grout were used to fill the casing from 346 ft up to a depth of 4



ft bgs (342 lineal ft of cement grout). Copies of the cement delivery tickets are included in Appendix 5.

Just prior to conducting the final grouting of the remaining portion of Well No. 2, Mr. Chris Stoker of IES obtained approval from the CRWQCB to grout up the entire well and to perform the installation of the mushroom cap at a later date, during demolition of nearby structures at the site.

### Closure

The following paragraphs summarize destruction operations at Well Nos. 2 and 3.

- A. The pump head, all pump column, and pump bowls were removed from each well. A total of 174 ft of pump column and bowls were removed from Well No. 3 and a total of 157 ft were removed from Well No. 2.
- B. An inert lime-water solution was added to each well to improve water clarity for a video survey in each well.
- C. Observation of the video surveys revealed a static water level in each well at 106 ft bgs. Sediment fill was encountered in Well No. 3 at a depth of approximately 483 ft. Sediment fill was encountered in Well No. 3 at a depth of approximately 544 ft bgs. Generally the well casing in each well was encrusted with scale/biofilm and perforations were generally partially clogged to clogged.
- D. Laboratory analyses of a sample of sediment fill near the bottom of each well indicated that the sediment fill is considered to be native earth materials. As a result the remaining fill after bailing (30 ft in Well No. 2 and 106 ft in Well No. 3) was left in the bottom of each well during the well destruction process.
- E. Due to the clogged to partially clogged perforations in each well, a casing perforator tool was used to place additional perforations in each well. Initially, additional perforations were placed in the 430-foot to 460-foot range in Well No. 2 and in the 450-foot to 470-foot range in Well No. 3.
- F. Following the initial set of additional perforations, an initial lift of cement grout was installed in each well. In Well No. 3 cement grout was installed from 566 ft to 346 ft and used a total of 7 yd<sup>3</sup>. In Well No. 3, 3½ yd<sup>3</sup> of cement grout was installed from 490 ft up to 385 ft bgs.
- G. After the initial lift of grouting in each well, additional perforations were installed in the well casing. In Well No. 2, additional perforations were placed



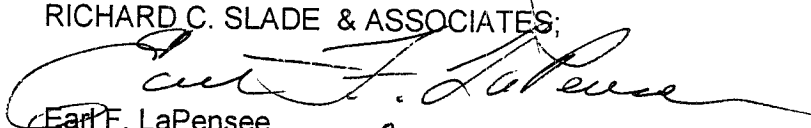
in the 210- to 230-foot, 260- to 280-foot, and 310- to 330-foot interval. In Well No. 3, additional perforations were placed in the 200- to 220-foot, 250- to 270-foot, 310- to 340-foot, and 380- to 385-foot intervals.

- H. A second lift of grout was then placed after the additional perforations had been cut into the casing of each well. In Well No. 2, the remaining well casing was grouted from 346 ft up to ground surface. Approximately 16 yd<sup>3</sup> of cement were used to grout Well No. 2 from 346 ft up to 4 ft bgs. The upper 4 ft in Well No. 2 were cemented-in manually. Cut-off of the upper 4 ft of casing and installation of the final mushroom cap in Well No. 2 are to be completed at a later time, during demolition of other nearby structures at the site.

In Well No. 3, approximately 16 yd<sup>3</sup> of cement grout were used to fill the well casing from 385 ft to ground surface and to install the mushroom cap (following excavation of the well pad and cut-off of the casing to 5-feet bgs). After installation of this mushroom cap, the small excavation was backfilled, thereby completing the destruction of Well No. 3.

The above outlined procedures were conducted in accordance with DWR Bulletin 75-81 and 74-90 guidelines. As a result, complete destruction of the two wells has been achieved and request for project closure is hereby requested. The attachments and appendices complete this report.

Respectively submitted:  
RICHARD C. SLADE & ASSOCIATES;

  
Earl F. LaPensee  
Certified Hydrogeologist No. 134

  
Richard C. Slade  
Certified Engineering Geologist No. 929



**APPENDIX 1**  
**ADDENDA AND CORRESPONDENCE**



July 24, 1998

Mr. Chris Stoker, Program Manager  
Integrated Environmental Services, Inc.  
3990 Westerly Place, Suite 210  
Newport Beach, California 92660

Job S9808

Re: Video Log Results and Final Recommendations  
For Destruction of Well No. 2  
Boeing Realty Corporation C-6 Facility, Torrance, California

Dear Mr. Stoker:

Presented herein are the results of the video log survey of Well No. 2 and our final recommendations for the permanent destruction of this well.

#### Video Log Results

On Thursday, July 23, 1998 at 2:00 pm a video log survey of the subject well was performed by Mr. John MacDonald of Water Well Redevelopers, Inc. of Anaheim. Witnesses to the video log included Mr. Dean Garcia of Beylik Drilling Company, Ms. Joann Ornelas, yourself, and Earl LaPensee of Richard C. Slade & Associates. Mr. John Marasco, Site Superintendent for Boeing Realty Company, was present for a portion of the survey also. No one from the California Water Quality Control Board-Los Angeles Region was present during the video log survey. It should be noted that the conditions observed in Well No. 2 are similar in many respects to those observed during the video survey conducted in Well No. 3.

Unperforated (blank) well casing (14 inches in diameter) was observed from ground surface to a depth of approximately 477 ft below grade surface (bgs), the depth at which the uppermost perforations in the casing were first observed. The water surface in the well was observed to occur at 106 ft bgs, similar to that observed in Well No. 3. No oil was observed on this water surface. The clarity of the video survey was generally good from ground surface to an approximate depth of 215 ft bgs. However, below that depth the clarity decreased markedly due to the presence of floating material and cloudy water, even though the well was treated with lime solution and water was allowed to flow into the well for a minimum period of 26 hours. At particular depth intervals, the casing walls were barely observable although discernible.

At present, the potentiometric, non-pumping water level in the well occurs approximately 371 feet above the uppermost perforations. Because of this, the groundwater is under a strong positive hydraulic head. As stated for Well No. 3 this strong hydraulic head



would tend to preclude any shallower groundwater, if it occurs, from entering the casing during perforation of the 200-foot to 400-foot zone.

From about 215 ft bgs to the total depth of the well at 544 ft bgs, the clarity of the video log was poor. As a result, it was generally difficult to observe the perforations and/or the walls of the casing. However, it could be determined through the use of the side scan camera view that the uppermost perforations occur at 477 ft bgs and the bottom-most perforations occur at a depth of approximately 540 ft bgs. This confirms the general interval of perforations as noted in the drillers' log of the well. During vertical descent of the camera it was observed that there are no obvious holes, ruptures or collapses in the casing from ground surface to the present bottom of the well at 544 ft bgs. Because the bottom of the well is documented in the drillers' logs at a depth of 596 ft bgs then approximately 52 ft of sediment fill occurs in the well.

Where visible, existing perforations are of the hydraulic Mills knife variety. This further corroborates the cable too-drilled method of well construction. These perforations, where visible, appear to be plugged to a varying degree. Scale, also appears to occur to a varying degree on the inside of the blank casing. Such scaling and partial plugging of well casing is a typical phenomenon in older wells.

#### Final Recommendations for Well Destruction

Based on the video log survey, the following are our final recommendations for destruction of Well No. 2.

1. Leave the existing 52-feet of sediment fill in the bottom of the well; this material represents fine- to coarse-grained sand and silt that entered through the large and irregularly-shaped Mills-knife cut perforations when the well was pumping. The amount of fill indicates that this well produced some amount of sand, although of lesser quantity than that apparently produced by Well No. 3.
2. Place a 10.3-sack mix sand-cement grout, using a temporary grout tremie pipe, in the depth zone from 400 ft to the bottom of the well. Cement grout materials shall be placed by a positive displacement method by pumping through the tremie pipe.
3. Allow this cement to set for 24 hours.
4. Utilize the hydraulic perforator tool to create additional new perforations in the casing as follows:
  - 380 to 400 ft
  - 310 to 340 ft
  - 250 to 270 ft
  - 200 to 220 ft





5. Place a similar sand-cement grout in the depth zone from 200 to 400 ft, using the same positive displacement pumping method.
6. Allow this cement to set for 24 hours.
7. Following setting of cement seal, the mushroom cap may be installed. Details concerning the cement type and the installation of the mushroom cap, etc. are provided in our Workplan dated June 1998.

Very truly yours,  
RICHARD C. SLADE & ASSOCIATES

A handwritten signature in black ink, appearing to read "Richard C. Slade", is written over the typed name.

Richard C. Slade  
Registered Professional Hydrogeologist  
*American Institute of Hydrology No. 106*



July 9, 1998

Mr. Chris Stoker, Program Manager  
Integrated Environmental Services, Inc.  
3990 Westerly Place, Suite 210  
Newport Beach, California 92660

Job S9808

Re: Video Log Results and Final Recommendations  
For Destruction of Well No. 3  
Boeing Realty Corporation C-6 Facility, Torrance, California

Dear Mr. Stoker:

Presented herein are the results of the video log survey of Well No. 3 and our final recommendations for the permanent destruction of this well.

#### Video Log Results

This morning a video log survey of the subject well was performed by Mr. John MacDonald of Water Well Redevelopers, Inc. of Anaheim. Witnesses to the video log included Mr. Dean Garcia of Beylik Drilling Company, yourself and the undersigned. Mr. John Marasco, Site Superintendent for Boeing Realty Company, was present for a portion of the survey also. No one from the California Water Quality Control Board—Los Angeles Region was present during the survey.

Unperforated (blank) well casing (14 inches in diameter) was observed from ground surface to a depth of 423 ft, the depth at which the uppermost perfs in the casing were first observed. The present water surface in the well occurs at 106 ft. Virtually no oil was observed on this water surface. The clarity of the video survey was good from ground surface. Casing joints, where visible, were typically encountered at 4-ft intervals; this is typical for cable tool-drilled wells.

The water surface occurs approximately 317 feet above the uppermost perforations. Because of this, the groundwater is under a strong positive hydraulic head. This strong head would preclude any shallower groundwater, if it occurs, from entering the casing during perforation of the 200- to 400-ft zone. However, it is unlikely that groundwater would be present in that depth zone since the driller's log for the well reveals the lithology to consist predominantly of a "Blue Clay."



From about 426 ft (i.e., just below the depth of the uppermost perforations at 423 ft) to about 445 ft, the clarity of the video log was poor, and it was difficult to observe the perforations and/or the walls of the casing. Hence, the length of the uppermost zone of casing perforations (on the driller's log it is from 427 to 433 ft) could not be determined. However, because this zone actually began at 423 ft, the bottom of this zone is likely at or near 429 ft. Below 445 ft, water clarity improved again.

The next set of perforations were observed to begin at a depth of 475 ft. Per the original driller's log, this set was reported to be from 478 to 516 ft. At a depth of 483 ft, the camera encountered sediment fill; this depth represents the present bottom of the well. The original cased depth of the well was 596 ft. Hence, there is now approximately 113 ft of fine-grained sediment fill in the lower portion of the well.

As the camera descended into the well, side scan (horizontal) views of the camera were made to provide better observation of the perforations and/or walls of the casing. Such side scans were performed at 247 ft, 425 ft, 445 ft, 453 ft, 465 ft, and 477 ft. These observations coupled with observations of the well casing during vertical descent of the camera revealed there are no obvious holes, ruptures or collapses in the casing from ground surface to the present bottom of the well at 483 ft.

Where visible, existing perforations are of the hydraulic Mills knife variety, further corroborating the cable too-drilled method of well construction. These perforations appear to be plugged to a varying degree. Scale also appears to occur to a varying degree on the inside of the blank casing. Such scaling and partial plugging of well casing is a typical phenomenon in older wells.

#### **Final Recommendations for Well Destruction**

Based on the video log survey, the following are our final recommendations for destruction of Well No. 3.

1. Leave the existing sediment fill in the bottom of the well; this material represents fine-grained sand and silt that entered through the large and irregularly-shaped Mills-knife cut perforations when the well was pumping. In essence, the well was a "sander."
2. Utilize a down-hole, hydraulic perforator tool to cut new perforations in the casing between the depths of 450 ft and 470 ft.
3. Place a 10.3-sack mix sand-cement grout, using a temporary grout tremie pipe, in the depth zone from 400 ft to 483 ft. Cement grout materials shall be placed by a positive displacement method by pumping through the tremie pipe.
4. Allow this cement to set for 24 hours.



5. Utilize the hydraulic perforator tool to create additional new perforations in the casing as follows:
  - 380 to 400 ft
  - 310 to 340 ft
  - 250 to 270 ft
  - 200 to 220 ft
6. Place a similar sand-cement grout in the depth zone from 200 to 400 ft, using the same positive displacement pumping method.
7. Allow this cement to set for 24 hours.
8. Following setting of cement seal, the mushroom cap may be installed. Details concerning the cement type and the installation of the mushroom cap, etc. are provided in our Workplan dated June 1998.

Very truly yours,  
RICHARD C. SLADE & ASSOCIATES

A handwritten signature in cursive script, appearing to read 'Richard C. Slade', followed by a horizontal line.

Richard C. Slade  
Registered Professional Hydrogeologist  
American Institute of Hydrology No. 106



## MEMORANDUM

DATE: June 29, 1998

TO: Chris Stoker, Integrated Environmental Services

FROM: Richard C. Slade, Richard C. Slade & Associates

RE: Change to Workplan  
Well Casing Perforation.

Based on our conversation with you today, we understand that the California Regional Water Quality Control Board (RWQCB) has expressed concern over one aspect of our proposed method of destroying the two onsite Boeing Realty Corporation C-6 Facility water-supply wells. Specifically, the RWQCB is very concerned with the time lag between perforation of the casing above the screened zone in each well and the final sealing of each well with grout.

We note their concern and, as a result, recommend that the well sealing work be conducted as follows in each well:

- 1) Following bailing of sediment fill, seal the lower (known) perforations with grout up to a depth of approximately 400 ft in each well.
- 2) Allow the grout set for a minimum of 24-hours.
- 3) Perform down-hole perforation of the casing above the newly grouted zone in each well up to a depth of approximately 200 ft bgs.
- 4) Seal the remaining portion of the well up to a depth of approximately 50 ft bgs.

As a result of the change to the workplan conditions there likely will be no change in costs for the project. In addition, the contractor is scheduled to commence work at the site on or before July 6, 1998.

If you have any questions regarding this memorandum, please call me.



June 19, 1998

Mr. Chris Stoker  
Integrated Environmental Services  
3990 Westerly Place, Suite 210  
Newport Beach, California 92660

RE: Addendum to Workplan for Destruction of  
Two Water-Supply Wells at the Boeing Realty  
Corporation C-6 Facility, Los Angeles, California  
Workplan dated June 1998

Dear Mr. Stoker:

This letter amends the above titled workplan with regard to sampling and analysis of the bailed sediment from each water-supply well, outlined on Page 6 of the workplan, as follows:

- 1) Delete analysis for nitrate.
- 2) Add analyses for the sediment samples for volatile organic analysis (VOCs) utilizing Environmental Protection Agency (EPA) method 8260, semi-volatile organic compounds (SVOCs) utilizing EPA method 8270.
- 3) Add analysis for metals and pH.

If you have any questions regarding this letter, please call us.

Very truly yours,

A handwritten signature in cursive script, reading "Earl F. LaPensee".

Earl F. LaPensee



## MEMORANDUM

**DATE:** June 18, 1998

**TO:** Chris Stoker, Integrated Environmental Services

**FROM:** Richard C. Slade, Richard C. Slade & Associates

**RE:** Reply to Regional Water Quality Control Board Letter (RWQCB) dated June 22, 1998, regarding the "Workplan for Destruction of Two Water-Supply Wells at the Boeing Realty Corporation C-6 Facility, Los Angeles, California"

This memorandum outlines our reply to three items outlined by the RWQCB with regard to their review of the Destruction Workplan for the two wells at the Boeing Realty Corporation C-6 Facility in Los Angeles, California.

Item No. 1: Shallow groundwater contamination and perforation of well casing.

The RWQCB is concerned with the likelihood of contamination of the deeper aquifers contaminated by shallow groundwater during perforation of the upper portion of the well casing in each well. It is recognized that shallow groundwater has the potential for entering the wells during perforation. However, the time between perforation of the casing in each well and grouting of the well is on the order of a few days. Therefore the likelihood of contaminants being introduced into the deeper aquifers is low.

There are no known data on the potentiometric surface in each aquifer penetrated by the wells, due to the method of construction. However, the drillers' logs do reveal that water was first encountered at a depth of 67 ft, in Water Well No. 2, and 78 ft, in Water Well No. 3 (see Appendix 1 of Workplan). Regardless, current perforations in the two wells begin at depths of 540 ft in Water Well No. 2 and 550 ft in Water Well No. 3.

Item No. 2: Well sediment samples.

The samples will be analyzed for a complete suite of analyses, including SVOCs, VOCs, metals, and pH. Nitrate will be deleted from the specifications. These changes will be presented to you in an addendum to the workplan.

Item No. 3: Oil (free product) in well.

The RWQCB is concerned with the presence of oil in the well, if it is detected, and its impact on the aquifer, if any. Generally, the presence of oil is of no concern for the following reasons:

1. The oil, if encountered, would be lubricating oil for the deep well turbine pump and, hence, it would likely be free of all additives and other potentially toxic material.
2. The oil, if present, would be of a limited and relatively small volume.
3. The oil, if present, would only occur at the surface of the water, which is located in the blank well casing, considerably above the uppermost perforations in either well. Moreover, neither well has been reportedly pumped for at least 10 years or more.
4. Each well has perforations commencing at 540 ft to 550 ft (see Appendix 1 of Workplan). At originally reported pump rates of 810 gpm, for Water Well No 2, and 1375 gpm, for Well No. 3, drawdowns were 29 and 33 ft, respectively. This resulted in original specific capacities of approximately 28 gpm/ft ddn, for Well No. 2, and 42 gpm/ft ddn, for Water Well No. 3. Thus, original pumping levels were shallow, ranging from 112 ft to 116 ft and probably remained that way throughout the pumping history of the well. Such pumping levels are considerably above the uppermost perforations in either well.

The lubricating oil, if any, has never been below top of perforations and, consequently, has never come into direct contact with any aquifer in the well. As a result, it is not possible for the oil to have any impact on aquifers perforated by the wells. Thus, it is our recommendation that the oil not be sampled and analyzed.

Should you have any questions regarding this memorandum, please call us.





**APPENDIX 2**  
**ORIGINAL DRILLER'S LOGS OF WELLS**

ROSCOE MOSS COMPANY

**WELL CONTRACTORS**

## RENTAL TOOLS

533 " " 538 " Sand and gravel to 3/4"

Measures designed to prevent  
infection in surgery,  
showing dimensions.

Diameter of Perforations	5/16	inches
Length of Perforations	1-3/4	"
Depth at which water was first found	67	ft.
Standing level before perforating	64 to 79	"
Standing level after perforating	83'	"

Water level when first started Test 83 ft.  
Draw down from standing level \_\_\_\_\_ "  
No. of gallons per minute pumped when Test first started \_\_\_\_\_  
No. of gallons per minute pumped when Test completed 810  
Draw down at completion of Test 29 ft.

Formation: Mention size of water gravel—				
0	ft. to	65	ft.	
65	" "	157	" "	Sandy clay
157	" "	185	" "	Sandy clay—soft streaks.
185	" "	212	" "	Fine sand
212	" "	420	" "	Blue sand and clay
420	" "	428	" "	Blue clay.
428	" "	434	" "	Fine sand to 3/8" gravel.
434	" "	456	" "	Blue sand and clay
456	" "	462	" "	Blue clay.
462	" "	475	" "	Fine sand and clay.
475	" "	482	" "	Blue clay
482	" "	486	" "	Sand and gravel to 1".
486	" "	504	" "	Clay and gravel.
504	" "	522	" "	Sand and gravel to 2".
522	" "	528	" "	Sand and clay
528	" "	533	" "	Sand to 3/4" gravel.
533	" "	538	" "	Fine sand some gravel.
	" "		" "	Sand and gravel to 3/4".

**BOE-C6-0134685**

(Defense Plants Corporation)

# ROSCOE MOSS COMPANY

4360 WORTH STREET  
LOS ANGELES, CAL.

WELL CONTRACTORS <sup>TRUCK</sup> RENTAL TOOLS  
Log of Well No. 3 Drilled for Aluminum Company of America  
of Los Angeles, Calif.

Exact Location 190th and Normandie Ave., Los Angeles, Calif

Started Work July 31, 1942

Completed Work August 29, 1942

Total depth 600 Size of shoe  
600 ft. of 14 inch 10 WOOD gauge casing used and left in Well

.....  
.....  
.....  
.....  
.....

Type of Perforator used Hydraulic 5/16"

Perforated 550 ft. to 538 ft. 8 Holes per 4 inches.

" 516 " " 478 " 8 " 4 "

" 433 " " 427 " 8 " 4 "

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Make diagram of perforation in section, showing dimensions.

Diameter of Perforations 5/16 inches

Length of Perforations 1-3/4 "

Depth at which water was first found 78 ft.

Standing level before perforating 76 "

Standing level after perforating 83 "

Note below your observation of any change in water level while drilling.

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Water level when first started Test 83 ft.

Draw down from standing level ..

No. of gallons per minute pumped when Test first started ..

No. of gallons per minute pumped when Test completed 1375

Draw down at completion of Test 33 ft.

Formation; Mention size of water gravel—

0 ft. to 3 ft. Top soil

3 " " 68 " Clay

68 " " 118 " Sandy clay-soft streaks

118 " " 122 " Fine brown sand

122 " " 134 " Brown sandy clay

134 " " 153 " Blue clay-streaks sand.

153 " " 187 " Fine blue sand.

187 " " 214 " Blue sandy clay

214 " " 316 " Blue clay

316 " " 324 " Blue clay-1/4" embedded gravel.

324 " " 330 " Blue clay

330 " " 333 " Blue clay 1/4" embedded gravel.

333 " " 418 " Blue clay

418 " " 424 " Fine muddy sand some 1/4" to 1/2"

" " " " gravel.

424 " " 432 " Fine sand to 3/8" clay

432 " " 437 " Fine sand and clay

Well No. 3

**BOE-C6-0134687**



### **APPENDIX 3 VIDEO SURVEY LOG SUMMARIES**

**VIDEO SURVEY LOG  
BRC WELL NO. 2  
JULY 23, 1998**

Depth (ft*)	Observed Casing Conditions
0 to 106	Blank casing with minor oil stains to 10 ft bgs. Casing joints every 4 feet. Noted sounding tube near ground surface.
106	Water surface, clear, no oil, no organic matter.
130, 167	Growths visible, minor scale below 130 ft.
175	Growths increasing, some cloudiness of water.
215-225	Water very cloudy, Casing walls barely visible. Water clears at little 225 ft.
258	Water becomes cloudy again and casing wall barely visible. Abundant biomass in water column.
305	Water clears slightly.
477	Side scan reveals top of perforations.
506	Hard to discern bottom of perforations.
525	Top of next set of perforations.
530, 535	Hard to discern bottom and top of perforations, at 530 and 535 ft respectively.
539-540	Bottom of perforations.
544	Fade to black, sediment fill.

\*Note: (1) Depths are measured from ground surface at side scan camera, which is 2-feet above back of light. Numbers above corrected.  
Video survey performed by Water Well Redevelopers of Anaheim.

**VIDEO SURVEY LOG  
BRC WELL NO. 3  
JULY 9, 1998**

Depth (ft*)	Observed Casing Conditions
0 to 106	Blank casing with abundant scale. Casing joints every 4 feet.
106	Water surface, clear, no oil, no organic matter. Light scale on casing. Water clarity good.
423	Top of perforations.
423 to 445	Water clarity generally poor.
445,453,465	Side scans show blank casing.
475	Within next set of perforations.
483	Fade to black, sediment fill. Still in perforations.

**\*Note: (1) Depths are measured from ground surface at side scan camera, which is 2-feet above back of light. Numbers above corrected.  
Video survey performed by Water Well Redevelopers of Anaheim.**





**APPENDIX 4  
RESULTS OF LABORATORY ANALYSIS  
OF WELL BOTTOM SEDIMENT SAMPLES**



**RESULTS OF LABORATORY ANALYSIS  
WELL NO. 3**



# Del Mar Analytical

2852 ... Ave., Irvine, CA 92606 (714) 261-1022 FAX (714) 261-12  
1014 E. Cooley L ... te A. Colton, CA 92324 (909) 370-4667 FAX (909) 370-104  
16525 Sherman Way, Suite C-11, Van Nuys, CA 91406 (818) 779-1844 FAX (818) 779-18  
2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-34

R. C. Slade & Associates  
6442 Coldwater Canyon  
North Hollywood, CA 91606  
Attention: R. Slade

Client Project ID: S9508

Sample Descript: Soil, Soil/Sand Well #3

Lab Number: HG01501

QC Batch: HG14071S

Sampled: Jul 13, 1998  
Received: Jul 13, 1998  
Extracted: Jul 14, 1998  
Analyzed: Jul 14, 1998  
Reported: Jul 15, 1998

## VOLATILE ORGANICS by GC/MS (EPA 8260)

Analyte	Reporting Limit µg/Kg (ppb)	Sample Result µg/Kg (ppb)	Analyte	Reporting Limit µg/Kg (ppb)	Sample Result µg/Kg (ppb)
Benzene.....	2.0	N.D.	Ethylbenzene.....	2.0	N.D.
Bromobenzene.....	5.0	N.D.	Hexachlorobutadiene.....	5.0	N.D.
Bromochloromethane.....	5.0	N.D.	Isopropylbenzene.....	2.0	N.D.
Bromodichloromethane.....	2.0	N.D.	p-Isopropyltoluene.....	2.0	N.D.
Bromoform.....	5.0	N.D.	Methylene chloride.....	20	N.D.
Bromomethane.....	5.0	N.D.	Naphthalene.....	5.0	N.D.
n-Butylbenzene.....	5.0	N.D.	n-Propylbenzene.....	2.0	N.D.
sec-Butylbenzene.....	5.0	N.D.	Styrene.....	2.0	N.D.
tert-Butylbenzene.....	5.0	N.D.	1,1,1,2-Tetrachloroethane....	5.0	N.D.
Carbon tetrachloride.....	5.0	N.D.	1,1,2,2-Tetrachloroethane....	2.0	N.D.
Chlorobenzene.....	2.0	N.D.	Tetrachloroethene.....	2.0	N.D.
Chloroethane.....	5.0	N.D.	Toluene.....	2.0	N.D.
<b>Chloroform.....</b>	<b>2.0</b>	<b>3.6</b>	1,2,3-Trichlorobenzene.....	5.0	N.D.
Chloromethane.....	5.0	N.D.	1,2,4-Trichlorobenzene.....	5.0	N.D.
2-Chlorotoluene.....	5.0	N.D.	1,1,1-Trichloroethane.....	2.0	N.D.
4-Chlorotoluene.....	5.0	N.D.	1,1,2-Trichloroethane.....	2.0	N.D.
Dibromochloromethane.....	2.0	N.D.	Trichloroethene.....	2.0	N.D.
1,2-Dibromo-3-chloropropane....	5.0	N.D.	Trichlorofluoromethane.....	5.0	N.D.
1,2-Dibromoethane.....	2.0	N.D.	1,2,3-Trichloropropane.....	10	N.D.
Dibromomethane.....	2.0	N.D.	1,2,4-Trimethylbenzene.....	2.0	N.D.
1,2-Dichlorobenzene.....	2.0	N.D.	1,3,5-Trimethylbenzene.....	2.0	N.D.
1,3-Dichlorobenzene.....	2.0	N.D.	Vinyl chloride.....	5.0	N.D.
1,4-Dichlorobenzene.....	2.0	N.D.	o-Xylene.....	2.0	N.D.
Dichlorodifluoromethane.....	5.0	N.D.	m,p-Xylenes.....	2.0	N.D.
1,1-Dichloroethane.....	2.0	N.D.			
1,2-Dichloroethane.....	2.0	N.D.			
1,1-Dichloroethene.....	5.0	N.D.			
cis-1,2-Dichloroethene.....	2.0	N.D.			
trans-1,2-Dichloroethene.....	2.0	N.D.			
1,2-Dichloropropane.....	2.0	N.D.			
1,3-Dichloropropane.....	2.0	N.D.			
2,2-Dichloropropane.....	2.0	N.D.			
1,1-Dichloropropene.....	2.0	N.D.			
cis-1,3-Dichloropropene.....	2.0	N.D.			
trans-1,3-Dichloropropene.....	2.0	N.D.			

Analytes reported as N.D. were not present at or above the reporting limit.

DEL MAR ANALYTICAL (ELAP #1197)

Patty Mata  
Project Manager

Surrogate Standard Recoveries (Accept. Limits):	
Dibromofluoromethane (80-120).....	99%
Toluene-d8 (81-117).....	104%
4-Bromofluorobenzene (74-121).....	98%

Results pertain only to samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

HG01501.RCS <1 of 9>

R. C. Slade & Associates  
 6442 Coldwater Canyon  
 North Hollywood, CA 91606  
 Attention: R. Slade

## Method Blank

QC Batch: HG14071S

Extracted: Jul 14, 1998  
 Analyzed: Jul 14, 1998  
 Reported: Jul 15, 1998

## VOLATILE ORGANICS by GC/MS (EPA 8260)

Analyte	Reporting Limit µg/Kg (ppb)	Sample Result µg/Kg (ppb)	Analyte	Reporting Limit µg/Kg (ppb)	Sample Result µg/Kg (ppb)
Benzene.....	2.0	N.D.	Ethylbenzene.....	2.0	N.D.
Bromobenzene.....	5.0	N.D.	Hexachlorobutadiene.....	5.0	N.D.
Bromochloromethane.....	5.0	N.D.	Isopropylbenzene.....	2.0	N.D.
Bromodichloromethane.....	2.0	N.D.	p-Isopropyltoluene.....	2.0	N.D.
Bromoform.....	5.0	N.D.	Methylene chloride.....	20	N.D.
Bromomethane.....	5.0	N.D.	Naphthalene.....	5.0	N.D.
n-Butylbenzene.....	5.0	N.D.	n-Propylbenzene.....	2.0	N.D.
sec-Butylbenzene.....	5.0	N.D.	Styrene.....	2.0	N.D.
tert-Butylbenzene.....	5.0	N.D.	1,1,1,2-Tetrachloroethane...	5.0	N.D.
Carbon tetrachloride.....	5.0	N.D.	1,1,2,2-Tetrachloroethane...	2.0	N.D.
Chlorobenzene.....	2.0	N.D.	Tetrachloroethene.....	2.0	N.D.
Chloroethane.....	5.0	N.D.	Toluene.....	2.0	N.D.
Chloroform.....	2.0	N.D.	1,2,3-Trichlorobenzene.....	5.0	N.D.
Chloromethane.....	5.0	N.D.	1,2,4-Trichlorobenzene.....	5.0	N.D.
2-Chlorotoluene.....	5.0	N.D.	1,1,1-Trichloroethane.....	2.0	N.D.
4-Chlorotoluene.....	5.0	N.D.	1,1,2-Trichloroethane.....	2.0	N.D.
Dibromochloromethane.....	2.0	N.D.	Trichloroethene.....	2.0	N.D.
1,2-Dibromo-3-chloropropane....	5.0	N.D.	Trichlorofluoromethane.....	5.0	N.D.
1,2-Dibromoethane.....	2.0	N.D.	1,2,3-Trichloropropane.....	10	N.D.
Dibromomethane.....	2.0	N.D.	1,2,4-Trimethylbenzene.....	2.0	N.D.
1,2-Dichlorobenzene.....	2.0	N.D.	1,3,5-Trimethylbenzene.....	2.0	N.D.
1,3-Dichlorobenzene.....	2.0	N.D.	Vinyl chloride.....	5.0	N.D.
1,4-Dichlorobenzene.....	2.0	N.D.	o-Xylene.....	2.0	N.D.
Dichlorodifluoromethane.....	5.0	N.D.	m,p-Xylenes.....	2.0	N.D.
1,1-Dichloroethane.....	2.0	N.D.			
1,2-Dichloroethane.....	2.0	N.D.			
1,1-Dichloroethene.....	5.0	N.D.			
cis-1,2-Dichloroethene.....	2.0	N.D.			
trans-1,2-Dichloroethene.....	2.0	N.D.			
1,2-Dichloropropane.....	2.0	N.D.			
1,3-Dichloropropane.....	2.0	N.D.			
2,2-Dichloropropane.....	2.0	N.D.			
1,1-Dichloropropene.....	2.0	N.D.			
cis-1,3-Dichloropropene.....	2.0	N.D.			
trans-1,3-Dichloropropene.....	2.0	N.D.			

Analytes reported as N.D. were not present at or above the reporting limit.

DEL MAR ANALYTICAL (ELAP #1197)

  
 Patty Mata  
 Project Manager

Surrogate Standard Recoveries (Accept. Limits):	
Dibromofluoromethane (80-120).....	103%
Toluene-d8 (81-117).....	103%
4-Bromofluorobenzene (74-121).....	96%

Results pertain only to samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

HG01501.RCS <6 of 9>



# Del Mar Analytical

2852 ... Ave., Irvine, CA 92606 (714) 261-1022 FAX (714) 261-1022  
 1014 E. Cooley L... ite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1022  
 16525 Sherman Way, Suite C-11, Van Nuys, CA 91406 (818) 779-1844 FAX (818) 779-1022  
 2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-8272

R. C. Slade & Associates  
 6442 Coldwater Canyon  
 North Hollywood, CA 91606  
 Attention: R. Slade

Client Project ID: S9508

Sample Descript: Soil, Soil/Sand Well #3  
 Lab Number: HG01501  
 QC Batch: HG14SE1S

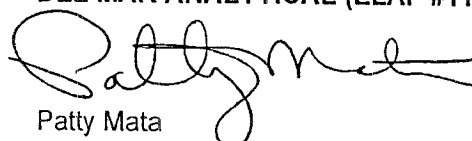
Sampled: Jul 13, 1998  
 Received: Jul 13, 1998  
 Extracted: Jul 14, 1998  
 Analyzed: Jul 16, 1998  
 Reported: Jul 16, 1998

## SEMI-VOLATILE ORGANICS by GC/MS (EPA 3550/8270)

Analyte	Reporting Limit µg/Kg (ppb)	Sample Result µg/Kg (ppb)	Analyte	Reporting Limit µg/Kg (ppb)	Sample Result µg/Kg (ppb)
Acenaphthene.....	100	N.D.	Dimethyl phthalate.....	100	N.D.
Acenaphthylene.....	100	N.D.	4,6-Dinitro-2-methylphenol...	250	N.D.
Aniline.....	150	N.D.	2,4-Dinitrophenol.....	250	N.D.
Anthracene.....	100	N.D.	2,4-Dinitrotoluene.....	100	N.D.
Azobenzene.....	150	N.D.	2,6-Dinitrotoluene.....	100	N.D.
Benzidine.....	1,000	N.D.	Di-N-octyl phthalate.....	500	N.D.
Benzoic Acid.....	500	N.D.	Fluoranthene.....	100	N.D.
Benz(a)anthracene.....	100	N.D.	Fluorene.....	100	N.D.
Benzo(b)fluoranthene.....	200	N.D.	Hexachlorobenzene.....	100	N.D.
Benzo(k)fluoranthene.....	200	N.D.	Hexachlorobutadiene.....	100	N.D.
Benzo(g,h,i)perylene.....	150	N.D.	Hexachlorocyclopentadiene.....	500	N.D.
Benzo(a)pyrene.....	200	N.D.	Hexachloroethane.....	200	N.D.
Benzyl alcohol.....	200	N.D.	Indeno(1,2,3-cd)pyrene.....	200	N.D.
Bis(2-chloroethoxy)methane.....	100	N.D.	Isophorone.....	100	N.D.
Bis(2-chloroethyl)ether.....	100	N.D.	2-Methylnaphthalene.....	100	N.D.
Bis(2-chloroisopropyl)ether.....	100	N.D.	2-Methylphenol.....	150	N.D.
Bis(2-ethylhexyl)phthalate.....	1,000	N.D.	4-Methylphenol.....	150	N.D.
4-Bromophenyl phenyl ether.....	150	N.D.	Naphthalene.....	150	N.D.
Butyl benzyl phthalate.....	500	N.D.	2-Nitroaniline.....	200	N.D.
4-Chloroaniline.....	100	N.D.	3-Nitroaniline.....	200	N.D.
2-Chloronaphthalene.....	100	N.D.	4-Nitroaniline.....	500	N.D.
4-Chloro-3-methylphenol.....	100	N.D.	Nitrobenzene.....	500	N.D.
2-Chlorophenol.....	250	N.D.	2-Nitrophenol.....	100	N.D.
4-Chlorophenyl phenyl ether.....	100	N.D.	4-Nitrophenol.....	500	N.D.
Chrysene.....	100	N.D.	N-Nitrosodiphenylamine.....	200	N.D.
Dibenz(a,h)anthracene.....	250	N.D.	N-Nitroso-di-N-propylamine.....	150	N.D.
Dibenzofuran.....	100	N.D.	Pentachlorophenol.....	500	N.D.
Di-N-butyl phthalate.....	250	N.D.	Phenanthrene.....	100	N.D.
1,3-Dichlorobenzene.....	100	N.D.	Phenol.....	150	N.D.
1,4-Dichlorobenzene.....	100	N.D.	Pyrene.....	150	N.D.
1,2-Dichlorobenzene.....	100	N.D.	1,2,4-Trichlorobenzene.....	100	N.D.
3,3-Dichlorobenzidine.....	500	N.D.	2,4,5-Trichlorophenol.....	150	N.D.
2,4-Dichlorophenol.....	100	N.D.	2,4,6-Trichlorophenol.....	150	N.D.
Diethyl phthalate.....	100	N.D.			
2,4-Dimethylphenol.....	250	N.D.			

Analytes reported as N.D. were not present at or above the reporting limit.

DEL MAR ANALYTICAL (ELAP #1197)

  
 Patty Mata  
 Project Manager

Surrogate Standard Recoveries (Accept. Limits):	
2-Fluorophenol (25-121).....	49%
Phenol-d6 (24-113).....	60%
2,4,6-Tribromophenol (19-122)	59%
Nitrobenzene-d5 (23-120).....	51%
2-Fluorobiphenyl (30-115).....	57%
Terphenyl-d14 (18-137).....	68%

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HG01501.RCS <2 of 9>

R. C. Slade & Associates  
 6442 Coldwater Canyon  
 North Hollywood, CA 91606  
 Attention: R. Slade

## Method Blank

Extracted: Jul 14, 1998  
 Analyzed: Jul 16, 1998  
 Reported: Jul 16, 1998

## SEMI-VOLATILE ORGANICS by GC/MS (EPA 3550/8270)

Analyte	Reporting Limit µg/Kg (ppb)	Sample Result µg/Kg (ppb)	Analyte	Reporting Limit µg/Kg (ppb)	Sample Result µg/Kg (ppb)
Acenaphthene.....	100	N.D.	Dimethyl phthalate.....	100	N.D.
Acenaphthylene.....	100	N.D.	4,6-Dinitro-2-methylphenol...	250	N.D.
Aniline.....	150	N.D.	2,4-Dinitrophenol.....	250	N.D.
Anthracene.....	100	N.D.	2,4-Dinitrotoluene.....	100	N.D.
Azobenzene.....	150	N.D.	2,6-Dinitrotoluene.....	100	N.D.
Benzidine.....	1,000	N.D.	Di-N-octyl phthalate.....	500	N.D.
Benzoic Acid.....	500	N.D.	Fluoranthene.....	100	N.D.
Benz(a)anthracene.....	100	N.D.	Fluorene.....	100	N.D.
Benzo(b)fluoranthene.....	200	N.D.	Hexachlorobenzene.....	100	N.D.
Benzo(k)fluoranthene.....	200	N.D.	Hexachlorobutadiene.....	100	N.D.
Benzo(g,h,i)perylene.....	150	N.D.	Hexachlorocyclopentadiene.....	500	N.D.
Benzo(a)pyrene.....	200	N.D.	Hexachloroethane.....	200	N.D.
Benzyl alcohol.....	200	N.D.	Indeno(1,2,3-cd)pyrene.....	200	N.D.
Bis(2-chloroethoxy)methane.....	100	N.D.	Isophorone.....	100	N.D.
Bis(2-chloroethyl)ether.....	100	N.D.	2-Methylnaphthalene.....	100	N.D.
Bis(2-chloroisopropyl)ether.....	100	N.D.	2-Methylphenol.....	150	N.D.
Bis(2-ethylhexyl)phthalate.....	1,000	N.D.	4-Methylphenol.....	150	N.D.
4-Bromophenyl phenyl ether.....	150	N.D.	Naphthalene.....	150	N.D.
Butyl benzyl phthalate.....	500	N.D.	2-Nitroaniline.....	200	N.D.
4-Chloroaniline.....	100	N.D.	3-Nitroaniline.....	200	N.D.
2-Chloronaphthalene.....	100	N.D.	4-Nitroaniline.....	500	N.D.
4-Chloro-3-methylphenol.....	100	N.D.	Nitrobenzene.....	500	N.D.
2-Chlorophenol.....	250	N.D.	2-Nitrophenol.....	100	N.D.
4-Chlorophenyl phenyl ether.....	100	N.D.	4-Nitrophenol.....	500	N.D.
Chrysene.....	100	N.D.	N-Nitrosodiphenylamine.....	200	N.D.
Dibenz(a,h)anthracene.....	250	N.D.	N-Nitroso-di-N-propylamine.....	150	N.D.
Dibenzofuran.....	100	N.D.	Pentachlorophenol.....	500	N.D.
Di-N-butyl phthalate.....	250	N.D.	Phenanthrene.....	100	N.D.
1,3-Dichlorobenzene.....	100	N.D.	Phenol.....	150	N.D.
1,4-Dichlorobenzene.....	100	N.D.	Pyrene.....	150	N.D.
1,2-Dichlorobenzene.....	100	N.D.	1,2,4-Trichlorobenzene.....	100	N.D.
3,3-Dichlorobenzidine.....	500	N.D.	2,4,5-Trichlorophenol.....	150	N.D.
2,4-Dichlorophenol.....	100	N.D.	2,4,6-Trichlorophenol.....	150	N.D.
Diethyl phthalate.....	100	N.D.			
2,4-Dimethylphenol.....	250	N.D.			

Analytes reported as N.D. were not present at or above the reporting limit.

DEL MAR ANALYTICAL (ELAP #1197)

  
 Patty Mata  
 Project Manager

Surrogate Standard Recoveries (Accept. Limits):	
2-Fluorophenol (25-121).....	49%
Phenol-d6 (24-113).....	57%
2,4,6-Tribromophenol (19-122)	65%
Nitrobenzene-d5 (23-120).....	46%
2-Fluorobiphenyl (30-115).....	57%
Terphenyl-d14 (18-137).....	84%

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HG01501.RCS <7 of 9>



R. C. Slade & Associates  
 6442 Coldwater Canyon  
 North Hollywood, CA 91606  
 Attention: R. Slade

Client Project ID: S9508

Sample Descript: Soil, Soil/Sand Well #3  
 Lab Number: HG01501

Sampled: Jul 13, 1998  
 Received: Jul 13, 1998  
 Extracted: Jul 14, 1998  
 Analyzed: Jul 14, 1998  
 Reported: Jul 15, 1998

## CALIFORNIA CODE OF REGULATIONS, TITLE 22 METALS

Analyte	EPA Method	STLC Max. Limit mg/L (ppm)	TTLCL Max. Limit mg/Kg (ppm)	Reporting Limit mg/Kg (ppm)	TTLCL Sample Result mg/Kg (ppm)
Antimony.....	6010	15	500	10	11
Arsenic.....	6010	5.0	500	2.0	6.2
Barium.....	6010	100	10000	1.0	5.2
Beryllium.....	6010	0.75	75	0.50	N.D.
Cadmium.....	6010	1.0	100	0.50	2.5
Chromium, total.....	6010	5.0	2500	1.0	97
Cobalt.....	6010	80	8000	1.0	12
Copper.....	6010	25	2500	1.0	300
Lead.....	6010	5.0	1000	2.0	6.3
Mercury.....	7471	0.20	20	0.020	0.025
Molybdenum.....	6010	350	3500	2.0	15
Nickel.....	6010	20	2000	1.0	190
Selenium.....	6010	1.0	100	2.0	N.D.
Silver.....	6010	5.0	500	1.0	N.D.
Thallium.....	6010	7.0	700	10	N.D.
Vanadium.....	6010	24	2400	1.0	1.1
Zinc.....	6010	250	5000	5.0	24

Analytes reported as N.D. were not present at or above the reporting limit.

DEL MAR ANALYTICAL (ELAP #1197)

  
 Patty Mata  
 Project Manager

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HG01501.RCS <3 of 9>



R. C. Slade & Associates  
 6442 Coldwater Canyon  
 North Hollywood, CA 91606  
 Attention: R. Slade

## Method Blank

Extracted: Jul 14, 1998  
 Analyzed: Jul 14, 1998  
 Reported: Jul 15, 1998

### CALIFORNIA CODE OF REGULATIONS, TITLE 22 METALS

Analyte	EPA Method	STLC Max. Limit mg/L (ppm)	TTLC Max. Limit mg/Kg (ppm)	Reporting Limit mg/Kg (ppm)	TTLC Sample Result mg/Kg (ppm)
Antimony.....	6010	15	500	10	N.D.
Arsenic.....	6010	5.0	500	2.0	N.D.
Barium.....	6010	100	10000	1.0	N.D.
Beryllium.....	6010	0.75	75	0.50	N.D.
Cadmium.....	6010	1.0	100	0.50	N.D.
Chromium, total.....	6010	5.0	2500	1.0	N.D.
Cobalt.....	6010	80	8000	1.0	N.D.
Copper.....	6010	25	2500	1.0	N.D.
Lead.....	6010	5.0	1000	2.0	N.D.
Mercury.....	7471	0.20	20	0.020	N.D.
Molybdenum.....	6010	350	3500	2.0	N.D.
Nickel.....	6010	20	2000	1.0	N.D.
Selenium.....	6010	1.0	100	2.0	N.D.
Silver.....	6010	5.0	500	1.0	N.D.
Thallium.....	6010	7.0	700	10	N.D.
Vanadium.....	6010	24	2400	1.0	N.D.
Zinc.....	6010	250	5000	5.0	N.D.

Analytes reported as N.D. were not present at or above the reporting limit.

DEL MAR ANALYTICAL (ELAP #1197)

  
 Patty Mata  
 Project Manager

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HG01501.RCS <8 of 9>





R. C. Slade & Associates Client Project ID: S9508  
6442 Coldwater Canyon  
North Hollywood, CA 91606 Sample Descript: Soil  
Attention: R. Slade First Sample #: HG01501

Sampled: Jul 13, 1998  
Received: Jul 13, 1998  
Extracted: Jul 15, 1998  
Analyzed: Jul 15, 1998  
Reported: Jul 15, 1998

## CHROMIUM VI (EPA 7196)

Laboratory Number	Sample Description	Reporting Limit mg/Kg (ppm)	Sample Result mg/Kg (ppm)
HG01501	Soil/Sand Well #3	0.50	N.D.

Analytes reported as N.D. were not present at or above the reporting limit.

DEL MAR ANALYTICAL (ELAP #1197)

  
Patty Mata  
Project Manager

Results pertain only to samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

HG01501.RCS <5 of 9>

R. C. Slade & Associates  
6442 Coldwater Canyon  
North Hollywood, CA 91606  
Attention: R. Slade

**Method Blank**


Extracted: Jul 15, 1998  
Analyzed: Jul 15, 1998  
Reported: Jul 15, 1998

**CHROMIUM VI (EPA 7196)**

Sample Description	Reporting Limit mg/Kg (ppm)	Sample Result mg/Kg (ppm)
Method Blank	0.50	N.D.

Analytes reported as N.D. were not present at or above the reporting limit.

**DEL MAR ANALYTICAL (ELAP #1197)**



Patty Mata  
Project Manager

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HG01501.RCS <9 of 9>

BOE-C6-0134700



# Del Mar Analytical

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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-3

R. C. Slade & Associates  
6442 Coldwater Canyon  
North Hollywood, CA 91606  
Attention: R. Slade

Client Project ID: S9508  
Sample Descript: Soil  
First Sample #: HG01501

Sampled: Jul 13, 1998  
Received: Jul 13, 1998  
Extracted: Jul 13, 1998  
Analyzed: Jul 13, 1998  
Reported: Jul 15, 1998

## pH (EPA 9045)

Laboratory Number	Sample Description	Reporting Limit pH units	Sample Result pH units
HG01501	Soil/Sand Well #3	N.A.	9.7

DEL MAR ANALYTICAL (ELAP #1855)

Patty Mata  
Project Manager

Results pertain only to samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

HG01501.RCS <4 of 9>

BOE-C6-0134701



R. C. Slade & Associates  
6442 Coldwater Canyon  
North Hollywood, CA  
Attention: R. Slade

Client Project ID: S9508

Sample Descript: STLC Extract of a Soil, Soil/Sand Well #3  
Lab Number: HG01867

Sampled: Jul 13, 1998  
Received: Jul 13, 1998  
Extracted: Jul 18, 1998  
Analyzed: Jul 21, 1998  
Reported: Jul 21, 1998

## LABORATORY ANALYSIS

Analyte	EPA Method	STLC	TTLC	Reporting Limit	STLC Sample Result
		Max. Limit mg/L (ppm)	Max. Limit mg/Kg (ppm)		
Chromium, total.....	6010	5.0	2500	0.10	N.D.
Copper.....	6010	25	2500	0.10	1.0
Nickel.....	6010	20	2000	0.10	0.29

Prior to analysis, the sample was extracted using the WET method as described in California Title 22, Section 66261, Appendix II. Analytes reported as N.D. were not present at or above the reporting limit.

DEL MAR ANALYTICAL (ELAP #1197)

  
Patty Mata  
Project Manager

Results pertain only to samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

HG01867.RCS <1 of 2>



R. C. Slade & Associates  
6442 Coldwater Canyon  
North Hollywood, CA  
Attention: R. Slade

## Method Blank

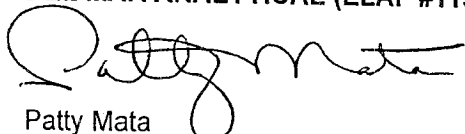
Extracted: Jul 18, 1998  
Analyzed: Jul 21, 1998  
Reported: Jul 21, 1998

## LABORATORY ANALYSIS

Analyte	EPA Method	STLC	TTL	Reporting Limit	STLC Sample Result
		Max. Limit mg/L (ppm)	Max. Limit mg/Kg (ppm)		
Chromium, total.....	6010	5.0	2500	0.10	N.D.
Copper.....	6010	25	2500	0.10	N.D.
Nickel.....	6010	20	2000	0.10	N.D.

Prior to analysis, the sample was extracted using the WET method as described in California Title 22, Section 66261, Appendix II.  
Analytes reported as N.D. were not present at or above the reporting limit.

DEL MAR ANALYTICAL (ELAP #1197)

  
Patty Mata  
Project Manager

Results pertain only to samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

HG01867.RCS <2 of 2>



## MS/MSD DATA REPORT

**METHOD: METALS**

**Instrument: ICP**

**Matrix: Soil**

**Date**

**Analyzed:** 7/21/98

**Sample:** HG01223

**Batch:** HG18SL2S(A)

Analyte	R1	Sp	MS	MSD	PR1	PR2	RPD	MEAN PR	Acceptance Limits	
	ppm	ppm	ppm	ppm	%	%	%	%	RPD	MPR
Chromium	0.140	2.0	2.14	2.22	100%	104%	3.67%	102%	20	80-120
Copper	0	2.0	2.37	2.46	119%	123%	3.73%	121%	20	80-120
Lead *	27.2	2.0	30.1	28.4	145%	60%	5.81%	103%	20	80-120
Nickel	0.364	2.0	2.45	2.32	104%	98%	5.45%	101%	20	80-120

\* Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See LCS for batch validation.

### Definition of Terms:

- R1..... Result of Sample Analysis  
 Sp..... Spike Concentration Added to Sample  
 MS..... Matrix Spike Result  
 MSD..... Matrix Spike Duplicate Result  
 PR1..... Percent Recovery of MS;  $((MS-R1) / SP) \times 100$   
 PR2..... Percent Recovery of MSD;  $((MSD-R1) / SP) \times 100$   
 RPD..... Relative Percent Difference;  $((MS-MSD)/(MS+MSD)/2) \times 100$   
 Acceptance Limits..... Statistically determined on an annual basis.

DEL MAR ANALYTICAL



## ADDITIONAL ANALYSIS REQUEST FORM

Today's Date: 7/16/98 Del Mar Analytical Project Manager: PM

Request via: ☒ telephone ☐ chain of custody form ☐ fax transmission ☐ E-mail ☐ other

Client: RCS Contact: Br Slade

Project: S9508

Date Sampled: 7/13/98 Date Received: 7/13/98

Status: α in progress ☐ completed ☐ received today ☐ received yesterday ☐ on hold ☐ other

**SAMPLE  
NUMBER**

## SAMPLE DESCRIPTION

**ANALYSIS  
REQUESTED**

## SPECIAL REQUIREMENTS

HG01501

Soil/Sand Well #3

STZ	Cu
↓	Cu
	Ni

TURNAROUND STATUS: ☐ Same Day ☐ 24hr ☐ 48hr ☒ 3days  
☐ 5days ☐ Standard ☐ No Rush Charge



## MS/MSD DATA REPORT

EPA METHOD: 7471

Matrix: Soil

Date  
 Analyzed: 7/14/98  
 Sample: HG01437  
 Batch: HG14HG1S

Analyte	R1	Sp	MS	MSD	PR1	PR2	RPD	MEAN PR	Acceptance Limits	
	ppm	ppm	ppm	ppm	%	%	%	%	RPD	MPR
Mercury	0.028	0.80	0.812	0.783	98%	94%	3.6%	96%	20	80-120

### Definition of Terms:

- R1..... Result of Sample Analysis
- Sp..... Spike Concentration Added to Sample
- MS..... Matrix Spike Result
- MSD..... Matrix Spike Duplicate Result
- PR1..... Percent Recovery of MS;  $((MS-R1) / SP) \times 100$
- PR2..... Percent Recovery of MSD;  $((MSD-R1) / SP) \times 100$
- RPD..... Relative Percent Difference;  $((MS-MSD)/(MS+MSD)/2) \times 100$
- Acceptance Limits..... Statistically determined on an annual basis.

Del Mar Analytical





## MS/MSD DATA REPORT

EPA METHOD: 8260

Matrix: Soil

Date

Analyzed: 7/14/98

Sample: HG01438

Batch: HG14071S

Analyte	R1	Sp	MS	MSD	PR1	PR2	RPD	MEAN PR	Acceptance Limits	
	ppb	ppb	ppb	ppb	%	%	%	%	RPD	MPR
Vinyl Chloride	0	25	22	21	88%	84%	4.7%	86%	30	30-160
1,1-Dichloroethene	0	25	25	24	100%	96%	4.1%	98%	40	45-165
MTBE	0	25	25	24	100%	96%	4.1%	98%	40	55-155
1,1-Dichloroethane	0	25	24	24	96%	96%	0.0%	96%	20	55-150
Chloroform	0	25	24	23	96%	92%	4.3%	94%	20	65-140
1,2-Dichloroethane	0.2	25	22	21	87%	83%	4.7%	85%	30	55-145
Benzene	0	25	23	23	92%	92%	0.0%	92%	25	60-140
Trichloroethene	0	25	25	24	100%	96%	4.1%	98%	30	60-145
Toluene	0	25	24	23	96%	92%	4.3%	94%	20	65-140
Tetrachloroethene	0	25	24	23	96%	92%	4.3%	94%	50	10-200
Chlorobenzene	0	25	24	23	96%	92%	4.3%	94%	20	70-135
Ethylbenzene	0	25	24	23	96%	92%	4.3%	94%	20	70-140
m,p-Xylenes	0	50	48	47	96%	94%	2.1%	95%	20	40-160
o-Xylene	0	25	24	24	96%	96%	0.0%	96%	20	65-150

### Definition of Terms:

- R1..... Result of Sample Analysis  
 Sp..... Spike Concentration Added to Sample  
 MS..... Matrix Spike Result  
 MSD..... Matrix Spike Duplicate Result  
 PR1..... Percent Recovery of MS;  $((MS-R1) / SP) \times 100$   
 PR2..... Percent Recovery of MSD;  $((MSD-R1) / SP) \times 100$   
 RPD..... Relative Percent Difference;  $((MS-MSD)/(MS+MSD)/2) \times 100$   
 Acceptance Limits..... Statistically determined on an annual basis.

DEL MAR ANALYTICAL



## MS/MSD DATA REPORT

EPA METHOD: 7196A

Matrix: Soil

Date Analyzed: 7/15/98

Sample: HG01501

Batch: HG15C61S

Analyte	R1	Sp	MS	MSD	PR1	PR2	RPD	MEAN PR	Acceptance Limits	
	ppm	ppm	ppm	ppm	%	%	%	%	RPD	MPR
Chromium VI	0	3.33	0.295	0.259	9%	8%	0.0%	8%	20	80-120

\* The MS/MSD recoveries and/or RPD were outside of acceptance limits due to sample matrix effects.  
 See LCS for batch validation.

### Definition of Terms:

R1..... Result of Sample Analysis  
 Sp..... Spike Concentration Added to Sample  
 MS..... Matrix Spike Result  
 MSD..... Matrix Spike Duplicate Result  
 PR1..... Percent Recovery of MS;  $((MS-R1) / SP) \times 100$   
 PR2..... Percent Recovery of MSD;  $((MSD-R1) / SP) \times 100$   
 RPD..... Relative Percent Difference;  $((MS-MSD)/(MS+MSD)/2) \times 100$   
 Acceptance Limits..... Statistically determined on an annual basis.

DEL MAR ANALYTICAL



## LCS DATA REPORT

### EPA METHOD: 7196A

Date

Analyzed: 7/10/98

Batch: HG10C61S

Analyte	St	R1	PR	Acceptance Limits
	ppm	ppm	%	%
Chromium VI	3.0	2.4	80%	80-120

#### Definition of Terms:

St. .... Concentration of standard added to blank.

R1 .... Standard Result

PR .... Percent Recovery of R1;  $(R1 / St) \times 100$

Acceptance Limits. .... Statistically determined on an annual basis.

DEL MAR ANALYTICAL

## MS/MSD DATA REPORT

**METHOD: METALS**

**Instrument: ICP**

**Matrix: Soil**

Date Analyzed: 7/14/98

Sample: HG01510

Batch: HG14ME1S

Analyte	R1	Sp	MS	MSD	PR1	PR2	RPD	MEAN PR	Acceptance Limits	
	ppm	ppm	ppm	ppm	%	%	%	%	RPD	MPR
Antimony *	0	50	26.0	25.4	52%	51%	2.33%	51%	20	80-120
Arsenic	2.07	50	46.9	46.3	90%	88%	1.29%	89%	20	80-120
Barium	61.2	50	108	107	94%	92%	0.930%	93%	20	80-120
Beryllium	0	50	42.8	42.0	86%	84%	1.89%	85%	20	80-120
Cadmium	0	50	46.5	45.8	93%	92%	1.52%	92%	20	80-120
Chromium	20.5	50	80.0	78.7	119%	116%	1.64%	118%	20	80-120
Coalt	7.84	50	54.5	53.8	93%	92%	1.29%	93%	20	80-120
Copper	12.1	50	57.7	56.8	91%	89%	1.57%	90%	20	80-120
Lead	43.4	50	97.9	96.5	109%	106%	1.44%	108%	20	80-120
Molybdenum	0	50	45.3	44.9	91%	90%	0.887%	90%	20	80-120
Nickel	20.2	50	70.2	69.1	100%	98%	1.58%	99%	20	80-120
Selenium *	0	50	38.4	37.9	77%	76%	1.31%	76%	20	80-120
Silver	0	50	9.14	8.92	18%	18%	2.44%	18%	20	80-120
Thallium *	0	50	39.4	39.3	79%	79%	0.254%	79%	20	80-120
Vanadium	31.4	50	76.7	75.6	91%	88%	1.44%	90%	20	80-120
Zinc	70.4	50	117	115	93%	89%	1.72%	91%	20	80-120

\* The MS/MSD recoveries and/or RPD were outside of acceptance limits due to sample matrix effects.  
 See LCS for batch validation.

### Definition of Terms:

R1..... Result of Sample Analysis  
 Sp..... Spike Concentration Added to Sample  
 MS..... Matrix Spike Result  
 MSD..... Matrix Spike Duplicate Result  
 PR1..... Percent Recovery of MS;  $((MS-R1) / SP) \times 100$   
 PR2..... Percent Recovery of MSD;  $((MSD-R1) / SP) \times 100$   
 RPD..... Relative Percent Difference;  $((MS-MSD)/(MS+MSD)/2) \times 100$   
 Acceptance Limits..... Statistically determined on an annual basis.

DEL MAR ANALYTICAL



## LCS DATA REPORT

**METHOD: METALS**  
**Instrument: ICP**

Date Analyzed: 7/14/98

Batch: HG14ME1S

Analyte	St	R1	PR	Acceptance Limits
	ppm	ppm	%	%
Antimony	50	51.4	103%	80-120
Selenium	50	44.8	90%	80-120
Thallium	50	44.2	88%	80-120

### Definition of Terms:

St. .... Concentration of standard added to blank.  
R1 .... Standard Result  
PR .... Percent Recovery of R1;  $(R1 / St) \times 100$   
Acceptance Limits. .... Statistically determined on an annual basis.

DEL MAR ANALYTICAL

## MS/MSD DATA REPORT

EPA METHOD: 8270

Matrix: Soil

Date

Analyzed: 7/16/98

Sample: HG01445

Batch: HG14SE1S

Analyte	R1	Sp	MS	MSD	PR1	PR2	RPD	MEAN PR	Acceptance Limits	
	ppb	ppb	ppb	ppb	%	%	%	%	RPD	MPR
Phenol *	0	50	35	23	70%	46%	41%	58%	35	10-112
2-Chlorophenol *	0	50	34	19	68%	38%	57%	53%	50	23-134
1,4-Dichlorobenzene *	0	50	32	12	64%	24%	91%	44%	27	20-124
N-Nitroso-di-n-propylamine *	0.1	50	34	23	68%	46%	39%	57%	38	41-126
1,2,4-Trichlorobenzene *	0	50	30	16	60%	32%	61%	46%	38	44-142
4-Chloro-3-methylphenol	0	50	36	31	72%	62%	15%	67%	33	22-147
Acenaphthene *	0.1	50	35	28	70%	56%	22%	63%	19	47-145
2,4-Dinitrotoluene	0	50	39	35	78%	70%	11%	74%	47	39-139
4-Nitrophenol	0	50	38	35	76%	70%	8.2%	73%	50	10-132
Pentachlorophenol	0	50	32	29	64%	58%	9.8%	61%	47	17-109
Pyrene	0.1	50	46	46	92%	92%	0.0%	92%	36	52-115

\* The MS/MSD recoveries and/or RPD were outside of acceptance limits due to sample matrix effects.  
 See LCS for batch validation.

### Definition of Terms:

R1..... Result of Sample Analysis  
 Sp..... Spike Concentration Added to Sample  
 MS..... Matrix Spike Result  
 MSD..... Matrix Spike Duplicate Result  
 PR1..... Percent Recovery of MS;  $((MS-R1) / SP) \times 100$   
 PR2..... Percent Recovery of MSD;  $((MSD-R1) / SP) \times 100$   
 RPD..... Relative Percent Difference;  $((MS-MSD)/(MS+MSD)/2) \times 100$   
 Acceptance Limits..... Statistically determined on an annual basis.

DEL MAR ANALYTICAL



## LCS DATA REPORT

EPA METHOD: 8270

Date: 7/16/98

Batch: HG14SE1S

Analyte	St	R1	PR	Acceptance Limits
	ppb	ppb	%	%
Phenol	50	36	72%	10-112
2-Chlorophenol	50	35	70%	23-134
1,4-Dichlorobenzene	50	28	56%	20-124
N-Nitroso-di-n-propylamine	50	35	70%	41-126
1,2,4-Trichlorobenzene	50	30	60%	44-142
4-Chloro-3-methylphenol	50	39	78%	22-147
Acenaphthene	50	37	74%	47-145
2,4-Dinitrotoluene	50	45	90%	39-139
4-Nitrophenol	50	42	84%	10-132
Pentachlorophenol	50	36	72%	17-109
Pyrene	50	46	92%	52-115

### Definition of Terms:

St. .... Concentration of standard added to blank.

R1 .... Standard Result

PR .... Percent Recovery of R1;  $(R1 / St) \times 100$

DEL MAR ANALYTICAL









**RESULTS OF LABORATORY ANALYSIS  
WELL NO. 2**



# Del Mar Analytical

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R. C. Slade & Associates  
 6442 Coldwater Canyon, Suite 214  
 North Hollywood, CA 91606  
 Attention: E. La Pensce

Client Project ID: RCS

Sample Descript: Soil, Well No. 2 Bottom Sediment  
 Lab Number: HG03023  
 QC Batch: HG25091S

Sampled: Jul 24, 1998  
 Received: Jul 24, 1998  
 Extracted: Jul 25, 1998  
 Analyzed: Jul 25, 1998  
 Reported: Jul 29, 1998

## VOLATILE ORGANICS by GC/MS (EPA 8260)

Analyte	Reporting Limit µg/Kg (ppb)	Sample Result µg/Kg (ppb)	Analyte	Reporting Limit µg/Kg (ppb)	Sample Result µg/Kg (ppb)
Benzene.....	2.0	N.D.	Ethylbenzene.....	2.0	N.D.
Bromobenzene.....	5.0	N.D.	Hexachlorobutadiene.....	5.0	N.D.
Bromochloromethane.....	5.0	N.D.	Isopropylbenzene.....	2.0	N.D.
Bromodichloromethane.....	2.0	N.D.	p-Isopropyltoluene.....	2.0	N.D.
Bromoform.....	5.0	N.D.	Methylene chloride.....	20	N.D.
Bromomethane.....	5.0	N.D.	Naphthalene.....	5.0	N.D.
n-Butylbenzene.....	5.0	N.D.	n-Propylbenzene.....	2.0	N.D.
sec-Butylbenzene.....	5.0	N.D.	Styrene.....	2.0	N.D.
tert-Butylbenzene.....	5.0	N.D.	1,1,1,2-Tetrachloroethane....	5.0	N.D.
Carbon tetrachloride.....	5.0	N.D.	1,1,2,2-Tetrachloroethane....	2.0	N.D.
Chlorobenzene.....	2.0	N.D.	Tetrachloroethene.....	2.0	N.D.
Chloroethane.....	5.0	N.D.	Toluene.....	2.0	N.D.
Chloroform.....	2.0	N.D.	1,2,3-Trichlorobenzene.....	5.0	N.D.
Chloromethane.....	5.0	N.D.	1,2,4-Trichlorobenzene.....	5.0	N.D.
2-Chlorotoluene.....	5.0	N.D.	1,1,1-Trichloroethane.....	2.0	N.D.
4-Chlorotoluene.....	5.0	N.D.	1,1,2-Trichloroethane.....	2.0	N.D.
Dibromochloromethane.....	2.0	N.D.	Trichloroethene.....	2.0	N.D.
1,2-Dibromo-3-chloropropane....	5.0	N.D.	Trichlorofluoromethane.....	5.0	N.D.
1,2-Dibromoethane.....	2.0	N.D.	1,2,3-Trichloropropane.....	10	N.D.
Dibromomethane.....	2.0	N.D.	1,2,4-Trimethylbenzene.....	2.0	N.D.
1,2-Dichlorobenzene.....	2.0	N.D.	1,3,5-Trimethylbenzene.....	2.0	N.D.
1,3-Dichlorobenzene.....	2.0	N.D.	Vinyl chloride.....	5.0	N.D.
1,4-Dichlorobenzene.....	2.0	N.D.	o-Xylene.....	2.0	N.D.
Dichlorodifluoromethane.....	5.0	N.D.	m,p-Xylenes.....	2.0	N.D.
1,1-Dichloroethane.....	2.0	N.D.			
1,2-Dichloroethane.....	2.0	N.D.			
1,1-Dichloroethene.....	5.0	N.D.			
cis-1,2-Dichloroethene.....	2.0	N.D.			
trans-1,2-Dichloroethene.....	2.0	N.D.			
1,2-Dichloropropane.....	2.0	N.D.			
1,3-Dichloropropane.....	2.0	N.D.			
2,2-Dichloropropane.....	2.0	N.D.			
1,1-Dichloropropene.....	2.0	N.D.			
cis-1,3-Dichloropropene.....	2.0	N.D.			
trans-1,3-Dichloropropene.....	2.0	N.D.			

Analytes reported as N.D. were not present at or above the reporting limit.

DEL MAR ANALYTICAL (ELAP #1197)

  
 Rick DiMaio  
 Project Manager

Surrogate Standard Recoveries (Accept. Limits):	
Dibromofluoromethane (80-120).....	95%
Toluene-d8 (81-117).....	104%
4-Bromofluorobenzene (74-121).....	99%

Results pertain only to samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

HG03023.RCS <1 of 7>



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 (602) 968-8272 FAX (602) 968-1023

R. C. Slade & Associates  
 6442 Coldwater Canyon, Suite 214  
 North Hollywood, CA 91606  
 Attention: E. La Pensce

## Method Blank

QC Batch: HG25091S

Extracted: Jul 25, 1998  
 Analyzed: Jul 25, 1998  
 Reported: Jul 29, 1998

### VOLATILE ORGANICS by GC/MS (EPA 8260)

Analyte	Reporting Limit µg/Kg (ppb)	Sample Result µg/Kg (ppb)	Analyte	Reporting Limit µg/Kg (ppb)	Sample Result µg/Kg (ppb)
Benzene.....	2.0	N.D.	Ethylbenzene.....	2.0	N.D.
Bromobenzene.....	5.0	N.D.	Hexachlorobutadiene.....	5.0	N.D.
Bromochloromethane.....	5.0	N.D.	Isopropylbenzene.....	2.0	N.D.
Bromodichloromethane.....	2.0	N.D.	p-Isopropyltoluene.....	2.0	N.D.
Bromoform.....	5.0	N.D.	Methylene chloride.....	20	N.D.
Bromomethane.....	5.0	N.D.	Naphthalene.....	5.0	N.D.
n-Butylbenzene.....	5.0	N.D.	n-Propylbenzene.....	2.0	N.D.
sec-Butylbenzene.....	5.0	N.D.	Styrene.....	2.0	N.D.
tert-Butylbenzene.....	5.0	N.D.	1,1,1,2-Tetrachloroethane....	5.0	N.D.
Carbon tetrachloride.....	5.0	N.D.	1,1,2,2-Tetrachloroethane....	2.0	N.D.
Chlorobenzene.....	2.0	N.D.	Tetrachloroethene.....	2.0	N.D.
Chloroethane.....	5.0	N.D.	Toluene.....	2.0	N.D.
Chloroform.....	2.0	N.D.	1,2,3-Trichlorobenzene.....	5.0	N.D.
Chloromethane.....	5.0	N.D.	1,2,4-Trichlorobenzene.....	5.0	N.D.
2-Chlorotoluene.....	5.0	N.D.	1,1,1-Trichloroethane.....	2.0	N.D.
4-Chlorotoluene.....	5.0	N.D.	1,1,2-Trichloroethane.....	2.0	N.D.
Dibromochloromethane.....	2.0	N.D.	Trichloroethene.....	2.0	N.D.
1,2-Dibromo-3-chloropropane.....	5.0	N.D.	Trichlorofluoromethane.....	5.0	N.D.
1,2-Dibromoethane.....	2.0	N.D.	1,2,3-Trichloropropane.....	10	N.D.
Dibromomethane.....	2.0	N.D.	1,2,4-Trimethylbenzene.....	2.0	N.D.
1,2-Dichlorobenzene.....	2.0	N.D.	1,3,5-Trimethylbenzene.....	2.0	N.D.
1,3-Dichlorobenzene.....	2.0	N.D.	Vinyl chloride.....	5.0	N.D.
1,4-Dichlorobenzene.....	2.0	N.D.	o-Xylene.....	2.0	N.D.
Dichlorodifluoromethane.....	5.0	N.D.	m,p-Xylenes.....	2.0	N.D.
1,1-Dichloroethane.....	2.0	N.D.			
1,2-Dichloroethane.....	2.0	N.D.			
1,1-Dichloroethene.....	5.0	N.D.			
cis-1,2-Dichloroethene.....	2.0	N.D.			
trans-1,2-Dichloroethene.....	2.0	N.D.			
1,2-Dichloropropane.....	2.0	N.D.			
1,3-Dichloropropane.....	2.0	N.D.			
2,2-Dichloropropane.....	2.0	N.D.			
1,1-Dichloropropene.....	2.0	N.D.			
cis-1,3-Dichloropropene.....	2.0	N.D.			
trans-1,3-Dichloropropene.....	2.0	N.D.			

Analytes reported as N.D. were not present at or above the reporting limit.

DEL MAR ANALYTICAL (ELAP #1197)

  
 Rick DiMaio  
 Project Manager

Surrogate Standard Recoveries (Accept. Limits):	
Dibromofluoromethane (80-120).....	102%
Toluene-d8 (81-117).....	103%
4-Bromofluorobenzene (74-121).....	101%

Results pertain only to samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

HG03023.RCS <5 of 7>

BOE-C6-0134718



R. C. Slade & Associates  
 6442 Coldwater Canyon, Suite 214  
 North Hollywood, CA 91606  
 Attention: E. La Pensce

Client Project ID: RCS  
 Sample Descript: Soil, Well No. 2 Bottom Sediment  
 Lab Number: HG03023  
 QC Batch: HG24SE1S

Sampled: Jul 24, 1998  
 Received: Jul 24, 1998  
 Extracted: Jul 24, 1998  
 Analyzed: Jul 29, 1998  
 Reported: Jul 29, 1998

## SEMI-VOLATILE ORGANICS by GC/MS (EPA 3550/8270)

Analyte	Reporting Limit µg/Kg (ppb)	Sample Result µg/Kg (ppb)	Analyte	Reporting Limit µg/Kg (ppb)	Sample Result µg/Kg (ppb)
Acenaphthene.....	100	N.D.	Dimethyl phthalate.....	100	N.D.
Acenaphthylene.....	100	N.D.	4,6-Dinitro-2-methylphenol...	250	N.D.
Aniline.....	150	N.D.	2,4-Dinitrophenol.....	250	N.D.
Anthracene.....	100	N.D.	2,4-Dinitrotoluene.....	100	N.D.
Azobenzene.....	150	N.D.	2,6-Dinitrotoluene.....	100	N.D.
Benzidine.....	1,000	N.D.	Di-N-octyl phthalate.....	500	N.D.
Benzoic Acid.....	500	N.D.	Fluoranthene.....	100	N.D.
Benz(a)anthracene.....	100	N.D.	Fluorene.....	100	N.D.
Benzo(b)fluoranthene.....	200	N.D.	Hexachlorobenzene.....	100	N.D.
Benzo(k)fluoranthene.....	200	N.D.	Hexachlorobutadiene.....	100	N.D.
Benzo(g,h,i)perylene.....	150	N.D.	Hexachlorocyclopentadiene.....	500	N.D.
Benzo(a)pyrene.....	200	N.D.	Hexachloroethane.....	200	N.D.
Benzyl alcohol.....	200	N.D.	Indeno(1,2,3-cd)pyrene.....	200	N.D.
Bis(2-chloroethoxy)methane.....	100	N.D.	Isophorone.....	100	N.D.
Bis(2-chloroethyl)ether.....	100	N.D.	2-Methylnaphthalene.....	100	N.D.
Bis(2-chloroisopropyl)ether.....	100	N.D.	2-Methylphenol.....	150	N.D.
Bis(2-ethylhexyl)phthalate.....	1,000	N.D.	4-Methylphenol.....	150	N.D.
4-Bromophenyl phenyl ether.....	150	N.D.	Naphthalene.....	150	N.D.
Butyl benzyl phthalate.....	500	N.D.	2-Nitroaniline.....	200	N.D.
4-Chloroaniline.....	100	N.D.	3-Nitroaniline.....	200	N.D.
2-Chloronaphthalene.....	100	N.D.	4-Nitroaniline.....	500	N.D.
4-Chloro-3-methylphenol.....	100	N.D.	Nitrobenzene.....	500	N.D.
2-Chlorophenol.....	250	N.D.	2-Nitrophenol.....	100	N.D.
4-Chlorophenyl phenyl ether.....	100	N.D.	4-Nitrophenol.....	500	N.D.
Chrysene.....	100	N.D.	N-Nitrosodiphenylamine.....	200	N.D.
Dibenz(a,h)anthracene.....	250	N.D.	N-Nitroso-di-N-propylamine.....	150	N.D.
Dibenzofuran.....	100	N.D.	Pentachlorophenol.....	500	N.D.
Di-N-butyl phthalate.....	250	N.D.	Phenanthrene.....	100	N.D.
1,3-Dichlorobenzene.....	100	N.D.	Phenol.....	150	N.D.
1,4-Dichlorobenzene.....	100	N.D.	Pyrene.....	150	N.D.
1,2-Dichlorobenzene.....	100	N.D.	1,2,4-Trichlorobenzene.....	100	N.D.
3,3-Dichlorobenzidine.....	500	N.D.	2,4,5-Trichlorophenol.....	150	N.D.
2,4-Dichlorophenol.....	100	N.D.	2,4,6-Trichlorophenol.....	150	N.D.
Diethyl phthalate.....	100	N.D.			
2,4-Dimethylphenol.....	250	N.D.			

Analytes reported as N.D. were not present at or above the reporting limit.

DEL MAR ANALYTICAL (ELAP #1197)

Rick DiMaio  
 Project Manager

Surrogate Standard Recoveries (Accept. Limits):	
2-Fluorophenol (25-121).....	58%
Phenol-d6 (24-113).....	68%
2,4,6-Tribromophenol (19-122)	79%
Nitrobenzene-d5 (23-120).....	61%
2-Fluorobiphenyl (30-115).....	69%
Terphenyl-d14 (18-137).....	90%

Results pertain only to samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

HG03023.RCS <2 of 7>



R. C. Slade & Associates  
 6442 Coldwater Canyon, Suite 214  
 North Hollywood, CA 91606  
 Attention: E. La Pensce

## Method Blank

QC Batch: HG24SE1S

Extracted: Jul 24, 1998  
 Analyzed: Jul 25, 1998  
 Reported: Jul 29, 1998

### SEMI-VOLATILE ORGANICS by GC/MS (EPA 3550/8270)

Analyte	Reporting Limit µg/Kg (ppb)	Sample Result µg/Kg (ppb)	Analyte	Reporting Limit µg/Kg (ppb)	Sample Result µg/Kg (ppb)
Acenaphthene.....	100	N.D.	Dimethyl phthalate.....	100	N.D.
Acenaphthylene.....	100	N.D.	4,6-Dinitro-2-methylphenol...	250	N.D.
Aniline.....	150	N.D.	2,4-Dinitrophenol.....	250	N.D.
Anthracene.....	100	N.D.	2,4-Dinitrotoluene.....	100	N.D.
Azobenzene.....	150	N.D.	2,6-Dinitrotoluene.....	100	N.D.
Benzidine.....	1,000	N.D.	Di-N-octyl phthalate.....	500	N.D.
Benzoic Acid.....	500	N.D.	Fluoranthene.....	100	N.D.
Benz(a)anthracene.....	100	N.D.	Fluorene.....	100	N.D.
Benzo(b)fluoranthene.....	200	N.D.	Hexachlorobenzene.....	100	N.D.
Benzo(k)fluoranthene.....	200	N.D.	Hexachlorobutadiene.....	100	N.D.
Benzo(g,h,i)perylene.....	150	N.D.	Hexachlorocyclopentadiene.....	500	N.D.
Benzo(a)pyrene.....	200	N.D.	Hexachloroethane.....	200	N.D.
Benzyl alcohol.....	200	N.D.	Indeno(1,2,3-cd)pyrene.....	200	N.D.
Bis(2-chloroethoxy)methane.....	100	N.D.	Isophorone.....	100	N.D.
Bis(2-chloroethyl)ether.....	100	N.D.	2-Methylnaphthalene.....	100	N.D.
Bis(2-chloroisopropyl)ether.....	100	N.D.	2-Methylphenol.....	150	N.D.
Bis(2-ethylhexyl)phthalate.....	1,000	N.D.	4-Methylphenol.....	150	N.D.
4-Bromophenyl phenyl ether.....	150	N.D.	Naphthalene.....	150	N.D.
Butyl benzyl phthalate.....	500	N.D.	2-Nitroaniline.....	200	N.D.
4-Chloroaniline.....	100	N.D.	3-Nitroaniline.....	200	N.D.
2-Chloronaphthalene.....	100	N.D.	4-Nitroaniline.....	500	N.D.
4-Chloro-3-methylphenol.....	100	N.D.	Nitrobenzene.....	500	N.D.
2-Chlorophenol.....	250	N.D.	2-Nitrophenol.....	100	N.D.
4-Chlorophenyl phenyl ether.....	100	N.D.	4-Nitrophenol.....	500	N.D.
Chrysene.....	100	N.D.	N-Nitrosodiphenylamine.....	200	N.D.
Dibenz(a,h)anthracene.....	250	N.D.	N-Nitroso-di-N-propylamine.....	150	N.D.
Dibenzofuran.....	100	N.D.	Pentachlorophenol.....	500	N.D.
Di-N-butyl phthalate.....	250	N.D.	Phenanthrene.....	100	N.D.
1,3-Dichlorobenzene.....	100	N.D.	Phenol.....	150	N.D.
1,4-Dichlorobenzene.....	100	N.D.	Pyrene.....	150	N.D.
1,2-Dichlorobenzene.....	100	N.D.	1,2,4-Trichlorobenzene.....	100	N.D.
3,3-Dichlorobenzidine.....	500	N.D.	2,4,5-Trichlorophenol.....	150	N.D.
2,4-Dichlorophenol.....	100	N.D.	2,4,6-Trichlorophenol.....	150	N.D.
Diethyl phthalate.....	100	N.D.			
2,4-Dimethylphenol.....	250	N.D.			

Analytes reported as N.D. were not present at or above the reporting limit.

DEL MAR ANALYTICAL (ELAP #1197)

Rick DiMaio  
 Project Manager

Surrogate Standard Recoveries (Accept. Limits):	
2-Fluorophenol (25-121).....	58%
Phenol-d6 (24-113).....	63%
2,4,6-Tribromophenol (19-122)	63%
Nitrobenzene-d5 (23-120).....	58%
2-Fluorobiphenyl (30-115).....	64%
Terphenyl-d14 (18-137).....	90%

Results pertain only to samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

HG03023.RCS <6 of 7>



R. C. Slade & Associates  
6442 Coldwater Canyon, Suite 214  
North Hollywood, CA 91606  
Attention: E. La Pensee

Client Project ID: RCS  
Sample Descript: Soil, Well No. 2 Bottom Sediment  
Lab Number: HG03023

Sampled: Jul 24, 1998  
Received: Jul 24, 1998  
Extracted: Jul 27-29, 1998  
Analyzed: Jul 28-29, 1998  
Reported: Jul 29, 1998

## CALIFORNIA CODE OF REGULATIONS, TITLE 22 METALS

Analyte	EPA Method	STLC Max. Limit mg/L (ppm)	TTLc Max. Limit mg/Kg (ppm)	Reporting Limit mg/Kg (ppm)	TTLc Sample Result mg/Kg (ppm)
Antimony.....	6010	15	500	10	N.D.
Arsenic.....	6010	5.0	500	2.0	8.9
Barium.....	6010	100	10000	1.0	15
Beryllium.....	6010	0.75	75	0.50	N.D.
Cadmium.....	6010	1.0	100	0.50	1.5
Chromium, total.....	6010	5.0	2500	1.0	11
Cobalt.....	6010	80	8000	1.0	4.2
Copper.....	6010	25	2500	1.0	89
Lead.....	6010	5.0	1000	2.0	9.8
Mercury.....	7471	0.20	20	0.020	N.D.
Molybdenum.....	6010	350	3500	2.0	3.2
Nickel.....	6010	20	2000	1.0	64
Selenium.....	6010	1.0	100	2.0	N.D.
Silver.....	6010	5.0	500	1.0	N.D.
Thallium.....	6010	7.0	700	10	N.D.
Vanadium.....	6010	24	2400	1.0	4.0
Zinc.....	6010	250	5000	5.0	33

Analytes reported as N.D. were not present at or above the reporting limit.

DEL MAR ANALYTICAL (ELAP #1197)

  
Rick DiMaio  
Project Manager

Results pertain only to samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

HG03023.RCS <3 of 7>



R. C. Slade & Associates  
 6442 Coldwater Canyon, Suite 214  
 North Hollywood, CA 91606  
 Attention: E. La Pensee

## Method Blank

Extracted: Jul 27-29, 1998  
 Analyzed: Jul 28-29, 1998  
 Reported: Jul 29, 1998

### CALIFORNIA CODE OF REGULATIONS, TITLE 22 METALS

Analyte	EPA Method	STLC Max. Limit mg/L (ppm)	TTLC Max. Limit mg/Kg (ppm)	Reporting Limit mg/Kg (ppm)	TTLC Sample Result mg/Kg (ppm)
Antimony.....	6010	15	500	10	N.D.
Arsenic.....	6010	5.0	500	2.0	N.D.
Barium.....	6010	100	10000	1.0	N.D.
Beryllium.....	6010	0.75	75	0.50	N.D.
Cadmium.....	6010	1.0	100	0.50	N.D.
Chromium, total.....	6010	5.0	2500	1.0	N.D.
Cobalt.....	6010	80	8000	1.0	N.D.
Copper.....	6010	25	2500	1.0	N.D.
Lead.....	6010	5.0	1000	2.0	N.D.
Mercury.....	7471	0.20	20	0.020	N.D.
Molybdenum.....	6010	350	3500	2.0	N.D.
Nickel.....	6010	20	2000	1.0	N.D.
Selenium.....	6010	1.0	100	2.0	N.D.
Silver.....	6010	5.0	500	1.0	N.D.
Thallium.....	6010	7.0	700	10	N.D.
Vanadium.....	6010	24	2400	1.0	N.D.
Zinc.....	6010	250	5000	5.0	N.D.

Analytes reported as N.D. were not present at or above the reporting limit.

DEL MAR ANALYTICAL (ELAP #1197)

  
 Rick DiMaio  
 Project Manager

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HG03023.RCS <7 of 7>





R. C. Slade & Associates Client Project ID: RCS  
6442 Coldwater Canyon, Ste. 214  
North Hollywood, CA 91606 Sample Descript: Soil  
Attention: E. La Pensce First Sample #: HG03832

Sampled: Jul 24, 1998  
Received: Jul 24, 1998  
Extracted: Jul 31, 1998  
Analyzed: Jul 31, 1998  
Reported: Aug 4, 1998

## CHROMIUM VI (EPA 7196)

Laboratory Number	Sample Description	Reporting Limit mg/Kg (ppm)	Sample Result mg/Kg (ppm)
HG03832	Well No. 2 Bottom Sediment	0.50	N.D.

Analytes reported as N.D. were not present at or above the reporting limit.

DEL MAR ANALYTICAL (ELAP #1197)

  
Patty Mata  
Project Manager

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HG03832.RCS <1 of 2>



R. C. Slade & Associates  
6442 Coldwater Canyon, Ste. 214  
North Hollywood, CA 91606  
Attention: E. La Pensce

## Method Blank

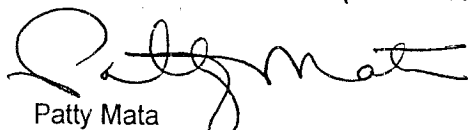
Extracted: Jul 31, 1998  
Analyzed: Jul 31, 1998  
Reported: Aug 4, 1998

## CHROMIUM VI (EPA 7196)

Laboratory Description	Reporting Limit mg/Kg (ppm)	Sample Result mg/Kg (ppm)
Method Blank	0.50	N.D.

Analytes reported as N.D. were not present at or above the reporting limit.

DEL MAR ANALYTICAL (ELAP #1197)

  
Patty Mata  
Project Manager

Results pertain only to samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

HG03832.RCS <2 of 2>

# MS/MSD DATA REPORT

**EPA METHOD: 7196**

**Matrix: Soil**

**Date**

**Analyzed:** 7/31/98

**Sample:** HG03832

**Batch:** HG31C61S

Analyte	R1	Sp	MS	MSD	PR1	PR2	RPD	MEAN PR	Acceptance Limits	
	ppm	ppm	ppm	ppm	%	%	%	%	RPD	MPR
Chromium VI	0	3.33	0	0	0%	0%	0%	0%	20	80-120

\* The MS/MSD recoveries and/or RPD were outside of acceptance limits due to sample matrix effects.  
 See LCS for batch validation.

## Definition of Terms:

R1..... Result of Sample Analysis  
 Sp..... Spike Concentration Added to Sample  
 MS..... Matrix Spike Result  
 MSD..... Matrix Spike Duplicate Result  
 PR1..... Percent Recovery of MS;  $((MS-R1) / SP) \times 100$   
 PR2..... Percent Recovery of MSD;  $((MSD-R1) / SP) \times 100$   
 RPD..... Relative Percent Difference;  $((MS-MSD)/(MS+MSD)/2) \times 100$   
 Acceptance Limits..... Statistically determined on an annual basis.

**DEL MAR ANALYTICAL**

**LCS DATA REPORT****EPA METHOD: 7196**

Date  
Analyzed: 7/31/98  
Batch: HG31C61S

Analyte	St	R1	PR	Acceptance Limits
	ppm	ppm	%	%
Chromium VI	3.0	2.8	93%	80-120

**Definition of Terms:**

St. .... Concentration of standard added to blank.  
R1 .... Standard Result  
PR .... Percent Recovery of R1;  $(R1 / St) \times 100$   
Acceptance Limits. ... Statistically determined on an annual basis.

**DEL MAR ANALYTICAL**

## ADDITIONAL ANALYSIS REQUEST FORM

Today's Date: 7/30/98 Del Mar Analytical Project Manager: RD for PM

Request via: ☒ telephone ☐ chain of custody form ☐ fax transmission ☐ E-mail ☐ other

Client: R.C. SLADE & ASSOC. Contact: EARL

Project: RCS

Date Sampled: 7/24/98 Date Received: 7/24/98

Status: ☐ in progress ☒ completed ☐ received today ☐ received yesterday ☐ on hold ☐ other

**SAMPLE  
NUMBER**

**SAMPLE  
DESCRIPTION**

**ANALYSIS  
REQUESTED**

**SPECIAL  
REQUIREMENTS**

H603023 WELL No. 2 BOTTOM SEDIMENT CHROME 6+

TURNAROUND STATUS: ☐ Same Day ☐ 24hr ☐ 48hr ☒ 3days  
☐ 5days ☐ Standard ☐ No Rush Charge





# Del Mar Analytical

1014 E. Cool Suite A, Colton, CA 92324  
16525 Sherman Way, Suite C-11, Van Nuys, CA 91406  
9484 Chesapeake Dr., Suite 805, San Diego, CA 92123  
2465 W. 12th St., Suite 1, Tempe, AZ 85281

(949) 261-1022 FAX (949) 261-12  
(909) 370-4667 FAX (909) 370-10  
(818) 779-1844 FAX (818) 779-18  
(619) 505-9596 FAX (619) 505-96  
(602) 968-8272 FAX (602) 968-13

R. C. Slade & Associates, Client Project ID: RCS  
6442 Coldwater Canyon, Suite 214  
North Hollywood, CA 91606 Sample Descript: Soil  
Attention: E. La Pensce First Sample #: HG03023

Sampled: Jul 24, 1998  
Received: Jul 24, 1998  
Extracted: Jul 24, 1998  
Analyzed: Jul 24, 1998  
Reported: Jul 29, 1998

## pH (EPA 9045)

Laboratory Number	Sample Description	Reporting Limit pH units	Sample Result pH units
HG03023	Well No. 2 Bottom Sediment	N.A.	9.1

DEL MAR ANALYTICAL (ELAP #1197)

  
Rick DiMaio  
Project Manager

Results pertain only to samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

HG03023.RCS <4 of 7>

BOE-C6-0134729



## MS/MSD DATA REPORT

EPA METHOD: 8260

Matrix: Soil

Date

Analyzed: 7/25/98

Sample: HG03109

Batch: HG25091S

Analyte	R1	Sp	MS	MSD	PR1	PR2	RPD	MEAN PR	Acceptance Limits	
	ppb	ppb	ppb	ppb	%	%	%	%	RPD	MPR
Vinyl Chloride	0	25	31	28	124%	112%	10%	118%	30	30-160
1,1-Dichloroethene	0	25	28	28	112%	112%	0.0%	112%	40	45-165
MTBE	0.6	25	20	26	78%	102%	26%	90%	40	55-155
1,1-Dichloroethane	0	25	27	27	108%	108%	0.0%	108%	20	55-150
Chloroform	0.4	25	27	28	106%	110%	3.6%	108%	20	65-140
1,2-Dichloroethane	0	25	23	25	92%	100%	8.3%	96%	30	55-145
Benzene	0	25	26	26	104%	104%	0.0%	104%	25	60-140
Trichloroethene	0	25	28	27	112%	108%	3.6%	110%	30	60-145
Toluene	0	25	27	26	108%	104%	3.8%	106%	20	65-140
Tetrachloroethene	0	25	29	28	116%	112%	3.5%	114%	50	10-200
Chlorobenzene	0	25	26	26	104%	104%	0.0%	104%	20	70-135
Ethylbenzene	0	25	27	26	108%	104%	3.8%	106%	20	70-140
m,p-Xylenes	0	50	53	51	106%	102%	3.8%	104%	20	40-160
o-Xylene	0	25	27	26	108%	104%	3.8%	106%	20	65-150

### Definition of Terms:

- R1..... Result of Sample Analysis  
 Sp..... Spike Concentration Added to Sample  
 MS..... Matrix Spike Result  
 MSD..... Matrix Spike Duplicate Result  
 PR1..... Percent Recovery of MS;  $((MS-R1) / SP) \times 100$   
 PR2..... Percent Recovery of MSD;  $((MSD-R1) / SP) \times 100$   
 RPD..... Relative Percent Difference;  $((MS-MSD)/(MS+MSD)/2) \times 100$   
 Acceptance Limits..... Statistically determined on an annual basis.

DEL MAR ANALYTICAL





## MS/MSD DATA REPORT

EPA METHOD: 7471

Matrix: Soil

Date  
Analyzed: 7/29/98  
Sample: HG03380  
Batch: HG29HG1S

Analyte	R1	Sp	MS	MSD	PR1	PR2	RPD	MEAN PR	Acceptance Limits	
	ppm	ppm	ppm	ppm	%	%	%	%	RPD	MPR
Mercury	0	0.80	0.748	0.746	94%	93%	0.3%	93%	20	80-120

### Definition of Terms:

- R1..... Result of Sample Analysis
- Sp..... Spike Concentration Added to Sample
- MS..... Matrix Spike Result
- MSD..... Matrix Spike Duplicate Result
- PR1..... Percent Recovery of MS;  $((MS-R1) / SP) \times 100$
- PR2..... Percent Recovery of MSD;  $((MSD-R1) / SP) \times 100$
- RPD..... Relative Percent Difference;  $((MS-MSD)/(MS+MSD)/2) \times 100$
- Acceptance Limits..... Statistically determined on an annual basis.

Del Mar Analytical



## MS/MSD DATA REPORT

EPA METHOD: 8270

Matrix: Soil

Date  
Analyzed: 7/25/98  
Sample: HG02446  
Batch: HG24SE1S

Analyte	R1	Sp	MS	MSD	PR1	PR2	RPD	MEAN PR	Acceptance Limits	
	ppb	ppb	ppb	ppb	%	%	%	%	RPD	MPR
Phenol *	0	50	0	2	0%	4%	200%	2%	35	10-112
2-Chlorophenol *	0	50	2	1	4%	2%	67%	3%	50	23-134
1,4-Dichlorobenzene *	0	50	1	1	2%	2%	0%	2%	27	20-124
N-Nitroso-di-n-propylamine *	0.4	50	2	1	3%	1%	67%	2%	38	41-126
1,2,4-Trichlorobenzene *	0	50	1	1	2%	2%	0%	2%	38	44-142
4-Chloro-3-methylphenol *	0	50	1	1	2%	2%	0%	2%	33	22-147
Acenaphthene *	0.1	50	1	1	2%	2%	0%	2%	19	47-145
2,4-Dinitrotoluene *	0	50	1	1	2%	2%	0%	2%	47	39-139
4-Nitrophenol *	0.2	50	0	0	0%	0%	NA	0%	50	10-132
Pentachlorophenol *	0	50	0	0	0%	0%	NA	0%	47	17-109
Pyrene *	0.1	50	2	2	4%	4%	0.0%	4%	36	52-115

\* The MS/MSD recoveries and/or RPD were outside of acceptance limits due to sample matrix effects.  
See LCS for batch validation.

### Definition of Terms:

R1..... Result of Sample Analysis  
Sp..... Spike Concentration Added to Sample  
MS..... Matrix Spike Result  
MSD..... Matrix Spike Duplicate Result  
PR1..... Percent Recovery of MS;  $((MS-R1) / SP) \times 100$   
PR2..... Percent Recovery of MSD;  $((MSD-R1) / SP) \times 100$   
RPD..... Relative Percent Difference;  $((MS-MSD)/(MS+MSD)/2) \times 100$   
Acceptance Limits..... Statistically determined on an annual basis.

DEL MAR ANALYTICAL



## LCS DATA REPORT

EPA METHOD: 8270

Date: 7/25/98

Batch: HG24SE1S

Analyte	St	R1	PR	Acceptance Limits
	ppb	ppb	%	%
Phenol	50	34	68%	10-112
2-Chlorophenol	50	35	70%	23-134
1,4-Dichlorobenzene	50	30	60%	20-124
N-Nitroso-di-n-propylamine	50	40	80%	41-126
1,2,4-Trichlorobenzene	50	32	64%	44-142
4-Chloro-3-methylphenol	50	39	78%	22-147
Acenaphthene	50	38	76%	47-145
2,4-Dinitrotoluene	50	39	78%	39-139
4-Nitrophenol	50	39	78%	10-132
Pentachlorophenol	50	33	66%	17-109
Pyrene	50	49	98%	52-115

### Definition of Terms:

St. .... Concentration of standard added to blank.

R1 .... Standard Result

PR .... Percent Recovery of R1;  $(R1 / St) \times 100$

DEL MAR ANALYTICAL

**MS/MSD DATA REPORT**
**METHOD: METALS**
**Instrument: ICP**
**Matrix: Soil**
**Date**
**Analyzed:** 7/28/98
**Sample:** HG03229
**Batch:** HG27ME1S

Analyte	R1	Sp	MS	MSD	PR1	PR2	RPD	MEAN PR	Acceptance Limits	
	ppm	ppm	ppm	ppm	%	%	%	%	RPD	MPR
Antimony	3.23	50	45.0	45.7	84%	85%	1.5%	84%	20	80-120
Arsenic	2.82	50	46.6	46.3	88%	87%	0.65%	87%	20	80-120
Barium	160	50	218	222	116%	124%	1.8%	120%	20	80-120
Beryllium	0	50	45.0	45.4	90%	91%	0.88%	90%	20	80-120
Cadmium	1.0	50	47.8	48.5	94%	95%	1.5%	94%	20	80-120
Chromium	22.0	50	80.0	81.2	116%	118%	1.5%	117%	20	80-120
Cobalt	9.13	50	59.2	60.1	100%	102%	1.5%	101%	20	80-120
Copper	16.0	50	67.9	69.4	104%	107%	2.2%	105%	20	80-120
Lead	5.44	50	51.6	52.1	92%	93%	0.96%	93%	20	80-120
Molybdenum	1.58	50	46.6	47.2	90%	91%	1.3%	91%	20	80-120
Nickel	34.0	50	86.5	87.6	105%	107%	1.3%	106%	20	80-120
Selenium *	0	50	36.7	37.8	73%	76%	3.0%	75%	20	80-120
Silver	0	10	8.97	9.23	90%	92%	2.9%	91%	20	80-120
Thallium *	0	50	38.6	39.1	77%	78%	1.3%	78%	20	80-120
Vanadium *	42.0	50	110	112	136%	140%	1.8%	138%	20	80-120
Zinc	52.0	50	108	110	113%	116%	1.6%	114%	20	80-120

**Definition of Terms:**

R1..... Result of Sample Analysis  
Sp..... Spike Concentration Added to Sample  
MS..... Matrix Spike Result  
MSD..... Matrix Spike Duplicate Result  
PR1..... Percent Recovery of MS;  $((MS-R1) / SP) \times 100$   
PR2..... Percent Recovery of MSD;  $((MSD-R1) / SP) \times 100$   
RPD..... Relative Percent Difference;  $((MS-MSD)/(MS+MSD)/2) \times 100$   
Acceptance Limits..... Statistically determined on an annual basis.

**DEL MAR ANALYTICAL**



## LCS DATA REPORT

**METHOD: METALS**  
**Instrument: ICP**

**Date**  
**Analyzed:** 7/28/98  
**Batch:** HG27ME1S

Analyte	St	R1	PR	Acceptance Limits
	ppm	ppm	%	%
Selenium	50	47.9	96%	80-120
Thallium	50	45.7	91%	80-120
Vanadium	50	46.2	92%	80-120

### Definition of Terms:

St. .... Concentration of standard added to blank.

R1 .... Standard Result

PR .... Percent Recovery of R1;  $(R1 / St) \times 100$

Acceptance Limits. .... Statistically determined on an annual basis.

**DEL MAR ANALYTICAL**





**APPENDIX 5**  
**CEMENT DELIVERY TICKETS**

# ROBERTSON'S

OPEN 7 DAYS

P.O. BOX 33140, RIVERSIDE, CA 92519

PHONE (909) 685-2200

CONTROL  
NUMBER

413446

#1 RIVERSIDE - 8830 VAN BUREN BLVD.

#2 MORENO VALLEY - 12890 DAY STREET

#3 REDLANDS - 8353 ALABAMA

#4 FONTANA - 13732 SLOVER

#5 POMONA - 2470 POMONA BLVD.

#6 HEMET/SAN JACINTO - 1675 STATE STREET

#7 BEAUMONT - 452 FIFTH PLACE

#8 SUN CITY - 27050 WATSON ROAD

#9 ARROWHEAD - 29750 HWY 18

#10 SANTA FE SPRINGS - 12311 GREENSTONE AVENUE

#11 DABAZON - 13981 APACHE TRAIL

#12 ANAHEIM HILLS - 2400 SANTA ANA CANYON RD.

#13 IRVINDALE - 13631 LIVE OAK LANE

#14 PASADENA - 1420 N. LINCOLN AVENUE

#15 VERNON - LOS ANGELES - 3335 E. 26TH STREET

#16 ANAHEIM - 201 E. COMMERCIAL

#17 SANTA ANA - 310 N. TOWNSEND

#18 LAKE FOREST - 29531 TOWN CENTRE

#19 ADELANTO - 12203 VIOLET RD.

#20 SAN CLEMENTE - 116 RINCON CT.

#21 IRVINE - 16081 CONSTRUCTION CIR. WEST

PLANT DATE CUSTOMER NO.

SOLD TO

MAP PAGE

TICKET NO.

10 08/13/98 53680

BEYLIK DRILLING INC

764A2

41344

TX CD DELIVERY ADDRESS & INSTRUCTIONS

CUSTOMER P.O. / JOB OR LOT #

190TH/NORMANDIE

DEAN

05-8007

05-8007

BOEING PLANT

TORRANCE

(562) 691-0903 LAST TKS

Job Phone :

CPU NO.  
147

METER READING  
1000.00

TIME TYPED  
12:12

TRUCK LIC NO.  
5B93070

LOAD NO.

SLUMP

TRUCK

DRIVER

1076 MACLEAN NEIL

SLURRY

1

6.00

542

1076

MACLEAN NEIL

SLURRY

TO JOB 1229

DRUM

Job-site Cylinder Test

JOB START : 12:00

ON JOB 1318

REVS.

Water added on job at

Yes

TIME ON JOB

MIN.

CHECK #

START POUR 1321

REVS.

Customer's request:

Yes

STAND BY

MIN.

CHECK

AMOUNT

BY

FINISH POUR 1329

REVS.

gals to Full Ld.

Yes

RATE OF X \$

PER MIN.

CASH

AMOUNT

BY

LEAVE JOB

REVS.

gals to 2/3 Ld.

Yes

Yes

OVERTIME CHARGE

PLANT MGR SIG

AMOUNT

BY

ARRIVE PLANT

REVS.

gals to 1/3 Ld.

Yes

Yes

OVERTIME CHARGE

PLANT MGR SIG

AMOUNT

BY

ADJ Meter

REVS.

Additional water added to this concrete will

ADJ Meter

4 MIN

4 min. per yd. free unloading time allowed.

Additional water added to this concrete will

REVS.

reduce its strength. Any water added is at

ADJ Meter

4 MIN

4 min. per yd. free unloading time allowed.

customer's own risk.

REVS.

Additional water added to this concrete will

ADJ Meter

4 MIN

4 min. per yd. free unloading time allowed.

customer's own risk.

REVS.

Additional water added to this concrete will

ADJ Meter

4 MIN

4 min. per yd. free unloading time allowed.

customer's own risk.

REVS.

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ADJ Meter

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customer's own risk.

REVS.

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ADJ Meter

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customer's own risk.

REVS.

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ADJ Meter

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customer's own risk.

REVS.

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ADJ Meter

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REVS.

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ADJ Meter

4 MIN

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customer's own risk.

REVS.

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4 MIN

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customer's own risk.

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4 MIN

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4 MIN

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REVS.

Additional water added to this concrete will

ADJ Meter

4 MIN

4 min. per yd. free unloading time allowed.

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ADJ Meter

4 MIN

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customer's own risk.

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ADJ Meter

4 MIN

4 min. per yd. free unloading time allowed.

customer's own risk.

REVS.

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ADJ Meter

4 MIN

4 min. per yd. free unloading time allowed.

customer's own risk.

REVS.

Additional water added to this concrete will

ADJ Meter

4 MIN

4 min. per yd. free unloading time allowed.

customer's own risk.

REVS.

Additional water added to this concrete will

ADJ Meter

4 MIN

4 min. per yd. free unloading time allowed.

customer's own risk.

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customer's own risk.

REVS.

Additional water added to this concrete will</



THIS IS TO CERTIFY that the following described commodity as weighed, measured, or counted by a weighmaster, whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed by Chapter 7 (commencing with Section 12700) of Division 5 of the California Business and Professions Code, administered by the Division of Measurement Standards of the California Department of Food and Agriculture.



# STANDARD CONCRETE PRODUCTS, INC.

Serving Southern California since 1949

VERY TICKET NO:

DATE

MEASURED AT: 49-2521092  
17-Aug-98

PALOS VERDES  
(310)-517-8225

SOLD TO 9 / SCHED ARRIVAL 14:00

CUSTOMER NO. CUSTOMER NAME 354 BEYLIK DRILLING, INC.  
JOB ADDRESS 190TH & NORMANDIE  
TORRANCE

YD<sup>3</sup> / M<sup>3</sup> THIS TICKET 10.00  
TOTAL YD<sup>3</sup> / M<sup>3</sup> 10.00  
NOS #  
CUSTOMER JOB # 05-7981  
P.O. # 05-7981

CROSS STREET/SPECIAL INSTRUCTION

MAP PAGE 161 19763  
PUC ZONE 19763

MIX DESIGN #

721

SACK CONTENT

PSI/MPa

N/S

TOP SIZE AGGREGATE

SAND

SLUMP/PENETRATION

CEMENT TYPE

II

10.3 SACK EQ SAND SLURRY (6.0)

TRUCK #/DRIVER

384 BRUCE D.

LOAD #

1

PRIVATE WEIGHMASTER

BY: 12/3

DEPUTY

DATE

CUBIC YARDS/  
CUBIC METERS

PRICE

EXTENSION

LEAVE PLANT

ARRIVE JOB

Cntr-Sert

ADMIX

START UNLOAD

FINISH UNLOAD

Cntr-Arrv

SLC

LEAVE JOB

ARRIVE PLANT

Cntr-Unld

SALES TAX

SUBTOTAL

OVERTIME

OVERTIME CH.

4 MINUTES PER CUBIC YARD/CUBIC METER FREE UNLOADING TIME ALLOWED. ADDITIONAL UNLOAD TIME CHARGED AT CURRENT RATE.

MIN.

WATER ADDED AT JOB SITE

PLANT WATER

NOTE: 1 GAL per Yd<sup>3</sup>/4.9 liters per M<sup>3</sup> will increase slump by 1"/25.4mm and reduce the 28 day strength by 200 PSI/90.72 MPa.

TOTAL

GALLONS/LITERS

ALLOW JOBWATER

MAX ALLOWABLE WATER

STANDARD CONCRETE DOES NOT GUARANTEE THE PERFORMANCE OF COLOR IN ANY COLORED CONCRETE MIX. TRUCKS ARE RELEASED FROM ANY RESPONSIBILITY OF ADDITION OF COLORS OR ADMIXTURES AND FOR DAMAGES WHICH MAY BE INCURRED IN DELIVERING MATERIALS ACROSS SIDEWALK AND CURB. STANDARD CONCRETE DOES NOT GUARANTEE CONCRETE TEMPERATURE.

RECEIVED BY:

OTHER REMARKS

A CBR COMPANY

INSPECTORS COPY

Well No. 3 casing cement.  
G.L.R.

# ROBERTSON'S

OPEN 7 DAYS

P.O. BOX 33140, RIVERSIDE, CA 92519

PHONE (909) 685-2200

CONTROL  
NUMBER

486764

#1 RIVERSIDE - 6830 VAN BUREN BLVD.  
#2 MORENO VALLEY - 12890 DAY STREET  
#3 REDLANDS - 3053 ALABAMA  
#4 FONTANA - 13792 SLOVER  
#5 POMONA - 2470 POMONA BLVD.

#6 HEVET/SAN JACINTO - 1675 STATE STREET  
#7 BEAUMONT - 452 FIFTH PLACE  
#8 SUN CITY - 27050 WATSON ROAD  
#9 AFRONTHEAD - 29750 HWY 18  
#10 SANTA FE SPRINGS - 12311 GREENSTONE AVENUE

#11 CABAZON - 13890 APACHE TRAIL  
#12 ANAHEIM HILLS - 2400 SANTA ANA CANYON RD.  
#13 IRVINDALE - 13831 LIVE OAK LANE  
#14 PASADENA - 1420 N. LINCOLN AVENUE  
#15 VERNON - LOS ANGELES - 3365 E. 26TH STREET

#16 ANAHEIM - 201 E. COMMERCIAL  
#17 SANTA ANA - 910 N. TOWNSEND  
#18 LAKE FOREST - 29531 TOWN CENTRE  
#19 ADELANTO - 12203 VIOLET RD  
#20 SAN CLEMENTE - 116 RINCON CT  
#21 IRVINE - 16081 CONSTRUCTION CIR. WEST

PLAN 15 DATE 08/20/98 CUSTOMER 05000

SOLD TO BEYLIK DRILLING INC

MAR PAGE L754A2 TICKET NO 486764

TX CD 190TH & NORMANDIE  
DELIVERY ADDRESS & INSTRUCTIONS  
BOEING PLANT

DEAN  
TORRANCE

05-0810 05-0810  
(562)691-0903 LAST TKE

Job Phone : (562)755-5813

CPU NO 187 METER READING 500.00 TIME TYPED 11:23 TRUCK LONC 123456

LOAD NO 1 SLUMP \*\*\*\* TRUCK 651 DRIVER 1155 COVABRUBIAS ED SLURRY  
JOB START : 11:00

TO JOB 1145 DRUM REVS Job-site Cylinder Test ☐ Yes  
ON JOB 1230 Water added on job at ☐ Yes  
START POUR 1233 Customer's request ☐ Yes  
FINISH POUR 1325 ☐ Yes  
LEAVE JOB 1335 ☐ Yes  
ARRIVE PLANT Additional water added to this concrete will reduce its strength. Any water added is at customer's own risk.

TIME ON JOB MIN CHECK #  
STAND BY MIN CHECK #  
DATE OF X PER MIN CASH #  
48 MIN. OVERTIME CHARGE PLANT MGR SIG

min per yd free unloading time allowed  
Additional unloading time charged at current hourly truck rate

## UNLOADING RELEASE

In event of default in payment of the bill and it is necessary for seller to retain the services of an attorney for reason thereof, the buyer agrees to pay seller all costs and expenses incurred by reason thereof, including a reasonable attorney's fee plus 1% interest per month.

In consideration of Robertson's Material Dealer delivering the purchased material to a place designated by the undersigned, the undersigned hereby releases and agrees to indemnify and hold harmless said Material Dealer, their Agents, employees and drivers from all liability or claims for damages, loss by fire or theft, to all real and personal property at the location indicated hereon as a result of the movement of said Material Dealer's vehicles or employees or of any such property.

This release is intended to, and does cover, all movements of all vehicles of said Material Dealer, at the location indicated hereon, from the time such vehicles leave the building to enter upon the property described hereon until they return to such building, regardless of the number and/or dates of such deliveries or movements.

LOAD QUANTITY	CUMULATIVE QUANTITY	ORDERED QUANTITY	PRODUCT CODE	MIX AND COMMODITY DESCRIPTION	UNIT OF MEASURE	UNIT PRICE	AMOUNT
10.00	10.00	13.00	35533	10.850R	CY		

6 yd3 for Mushroom Cup in well No.3 and 7 yd3 for No.2 (4 from This load)

Robert D. Murphy 92.4

## DEL. CHARGE

WEIGHMASTER CERTIFICATE  
THIS IS TO CERTIFY that the following described commodity was weighed, measured, or counted by a weighmaster whose signature is on this certificate who is a recognized authority of accuracy as prescribed by Chapter 7 (commencing with Section 12700) of Division 5 of the California Business and Professions Code, administered by the Division of Measurement Standards of the California Department of Food and Agriculture.

Dennis J. Robertson  
WEIGHMASTER

BY DEPUTY

MAX ALLOWABLE WATER

DELIVERY TICKET

TAX

PREVIOUS BALANCE

SUB TOTAL

STAND BY CHARGE

TOTAL

RECEIVED BY



# ROBERTSON'S

OPEN 7 DAYS

P.O. BOX 33140, RIVERSIDE, CA 92519

PHONE (909) 685-2200

CONTROL  
NUMBER

486780

- #1 RIVERSIDE - 6830 VAN BUREN BLVD.
- #2 MORENO VALLEY - 12890 DAY STREET
- #3 REDLANDS - 8353 ALABAMA
- #4 FONTANA - 13792 SLOVER
- #5 POMONA - 2470 POMONA BLVD.

- #6 HEMET/SAN JACINTO - 1675 STATE STREET
- #7 BEAUMONT - 452 FIFTH PLACE
- #8 SUN CITY - 27050 WATSON ROAD
- #9 AROMIEHEAD - 29750 HWY 18
- #10 SANTA FE SPRINGS - 12011 GREENSTONE AVENUE

- #11 CAEAZON - 10990 APACHE TRAIL
- #12 ANAHEIM HILLS - 2400 SANTA ANA CANYON RD.
- #13 RIVINDALE - 13631 LIVE OAK LANE
- #14 PASADENA - 1420 N LINCOLN AVENUE
- #15 VERNON LOS ANGELES - 3365 E. 26TH STREET

- #16 ANAHEIM - 201 E. COMMERCIAL
- #17 SANTA ANA - 310 N. TOWNSEND
- #18 LAKE FOREST - 28531 TOWN CENTRE
- #19 ADELANTO - 12203 VIOLET RD.
- #20 SAN CLEMENTE - 118 RINCON CT.
- #21 IRVINE - 16081 CONSTRUCTION CIR. WEST

PLAN 15 DATE 08/20/98 CUSTOMER 55680

SOLD TO BEYLIK DRILLING INC

MAP PAGE L764A2 TICKET NO 486780

TX CD

DELIVERY ADDRESS & INSTRUCTIONS

190TH & NORMANDIE

BOEING PLANT

Job Phone 1 (562)755-5813

DEAN

TORRANCE

(562)691-0903 LAST TKS 651

ENTER OFF NORMANDIE

CPU NO 187 METER READING 600.00 TIME TYPED 13:00 TRUCK LIC NO 4874599

LOAD NO 2 SLUMP \*\*\*\* TRUCK 737 DRIVER 634 PASICA, GARY SLURRY  
JOB START : 11:00

TO JOB 1313 DRUM REVS Job-site Cylinder Test ☒ YES TIME ON JOB MIN CHECK #  
ON JOB 1349 Water added on job at ☐ YES STAND BY MIN CHECK ☐  
START POUR 1357 gals to Fill Ld. ☐ YES RATE OF X'S PER MIN. CASH ☐  
FINISH POUR 1410 gals to 2/3 Ld. ☐ YES MIN. OVERTIME CHARGE  
LEAVE JOB 1423 gals to 1/3 Ld. ☐ YES MIN. OVERTIME CHARGE

ADJ. Veier Additional water added to this concrete will reduce its strength. Any water added is at customer's own risk. Additional unloading time charged at current hourly truck rate.

## UNLOADING RELEASE

In event of default in payment of this ticket and it is in consideration of Robertson's (Material Dealer) delivering this purchased material to a place designated by the undersigned, the undersigned hereby releases and agrees to indemnify and hold harmless said Material Dealer, their Agents, employees and drivers from all liability or claims necessary for seller to retain the services of an attorney to defend and/or damage done by it or them to all real and personal property at the location indicated hereon as a result of the movement of said Material Dealer's vehicles or employees (both on and off the job) property thereof, including a reasonable attorney's fee plus 12% interest per month. This release is intended for and does cover all movements of all vehicles of said Material Dealer, at the location indicated hereon, from the time such vehicles leave the curb line to enter upon the property described hereon until they return to such curb line, regardless of the number and/or dates of such deliveries or movements.

LOAD QUANTITY	CUMULATIVE QUANTITY	ORDERED QUANTITY	PRODUCT	MIX AND COMMODITY DESCRIPTION	UNIT OF MEASURE	UNIT PRICE	AMOUNT
13.00	13.00	13.00	35333	10.382UR	DY		

300 EV  
remaining 3 yds for well no. 2  
9.74

LOAD WEIGHT SSD.

## DEL. CHARGE

## WEIGHMASTER CERTIFICATE

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Dennis Wheeler ROBERTSON'S WEIGHMASTER

BY DEPUTY

MAX ALLOWABLE WATER

DELIVERY TICKET

TAX

PREVIOUS BALANCE

SUB TOTAL

STAND BY CHARGE

TOTAL

RECEIVED BY



# ROBERTSON'S

OPEN 7 DAYS

P.O. BOX 33140, FIVERSIDE, CA 925 19

PHONE (909) 635-2200

CONTROL  
NUMBER

540393

THIS IS NOT A TICKET NO.

#1 RIVERSIDE - 8830 VAN BUREN BLVD.  
#2 MORENO VALLEY - 12890 DAY STREET  
#3 REDLANDS - 8353 ALABAMA  
#4 FONTANA - 13792 SLOVER  
#5 POMONA - 2470 POMONA BLVD.

#6 HEMET/SAN JACINTO - 1675 STATE STREET  
#7 BEAUMONT - 452 FIFTH PLACE  
#8 SUN CITY - 27050 WATSON ROAD  
#9 ARROWHEAD - 29750 HWY 18  
#10 SANTA FE SPRINGS - 12311 GREENSTONE AVENUE

#11 CABAZON - 13950 APACHE TRAIL  
#12 ANAHEIM HILLS - 2400 SANTA ANA CANYON RD.  
#13 IRVINDALE - 13631 LIVE OAK LANE  
#14 PASADENA - 1420 N. LINCOLN AVENUE  
#15 VERNON - LOS ANGELES - 3365 E. 26TH STREET

#16 ANAHEIM - 201 E. COMMERCIAL  
#17 SANTA ANA - 310 N. TOWNSEND  
#18 LAKE FOREST - 29531 TOWN CENTRE  
#19 ADELANTO - 12203 VIOLET RD.  
#20 SAN CLEMENTE - 116 RINCON CT.  
#21 IRVINE - 16081 CONSTRUCTION CIR. WEST

PLANT DATE CUSTOMER NO. SOLD TO MAP PAGE TICKET NO.  
10 08/24/98 53680 BEYLIK DRILLING INC L764A2 540393  
TX CD DELIVERY ADDRESS & INSTRUCTIONS DEAN 05-8013 05-8013  
S/W 190TH & NORMANDIE TORRANCE (562) 691-0903 LAST TKS 518  
Job Phone :

CPU NO. 154 METER READING 800.00 TIME TYPED 12:54 TRUCK LIC NO. 4Y38812  
LOAD NO. 2 SLUMP 8.00 TRUCK 508 DRIVER 1014 VERHELST MATT SLURRY  
TO JOB 1307 DRUM REVS. Job-site Cylinder Test ☒ Yes JOB START : 10:00  
ON JOB 1360 Water added on job at TIME ON JOB MIN CHECK #  
START HOUR 1410 Customer's request 35 STAND BY MIN CHECK 3  
FINISH HOUR 1420 gals to Full Ld. ☒ Yes RATE OF X \$ PER MIN CASH ☒ AMOUNT BY  
gals to 2/3 Ld. ☒ Yes \$ OVERTIME CHARGE PLANT MGR SIG  
gals to 1/3 Ld. ☒ Yes  
LEAVE JOB ADJ Meter 4 MIN  
ARRIVE PLANT Additional water added to this concrete will reduce its strength. Any water added is at customer's own risk. 4 min per yd. free unloading time allowed. Additional unloading time charged at current hourly truck rate.

## UNLOADING RELEASE

In event of default in payment of this ticket and it is necessary for seller to retain the services of an attorney by reason thereof, the buyer agrees to pay seller all costs and expenses incurred by reason thereof, including a reasonable attorney's fee plus 1 1/2% interest per month.

In consideration of Robertson's (Material Dealer) delivering this purchased material to a place designated by the undersigned, the undersigned hereby releases and agrees to indemnify and hold harmless said Material Dealer, their Agents, employees and drivers from all liability or claims for damage done by it or them, to all real and personal property at the location indicated hereon as a result of the movement of said Material Dealer's vehicles or employees upon or about such property. This release is intended to, and does cover all movements of all vehicles of said Material Dealer, at the location indicated hereon, from the time such vehicles leave the curb line to enter upon the property described hereon until they return to such curb line, regardless of the number and/or dates of such deliveries or movements.

LOAD QUANTITY	CUMULATIVE QUANTITY	ORDERED QUANTITY	PRODUCT CODE	MIX AND COMMODITY DESCRIPTION	UNIT OF MEASURE	UNIT PRICE	AMOUNT
10.00	20.00	20.00	35333	10.38LUR	CY		

LOAD WEIGHT SSD:

3 1/2 yards

## DEL. CHARGE

### WEIGHMASTER CERTIFICATE

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ROBERTSON'S  
WEIGHMASTER

Dave Galias

BY DEPUTY

MAX ALLOWABLE WATER  
DELIVERY TICKET

TAX

PREVIOUS  
BALANCE

SUB  
TOTAL

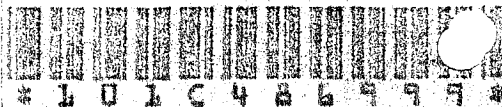
STAND BY  
CHARGE

TOTAL

A total of 6 yds  
used from this load  
for well No. 2

*Robert D. Moore*

RECEIVED BY



# ROBERTSON'S

OPEN 7 DAYS  
P.O. BOX 33140, RIVERSIDE, CA 92519  
PHONE (909) 685-2200

CONTROL NUMBER **486999**

- #1 RIVERSIDE - 6830 VAN BUREN BLVD.  
#2 MORENO VALLEY - 12890 DAY STREET  
#3 REDLANDS - 8353 ALABAMA  
#4 FONTANA - 13792 SLOVER  
#5 POMONA - 2470 POMONA BLVD.
- #6 HEMET/SAN JACINTO - 1675 STATE STREET  
#7 BEAUMONT - 452 FIFTH PLACE  
#8 SUN CITY - 27050 WATSON ROAD  
#9 ARROWHEAD - 29750 HWY 18  
#10 SANTA FE SPRINGS - 12311 GREENSTONE AVENUE
- #11 CABAZON - 13990 APACHE TRAIL  
#12 ANAHEIM HILLS - 2400 SANTA ANA CANYON RD.  
#13 RIVINDALE - 13631 LIVE OAK LANE  
#14 PASADENA - 1420 N. LINCOLN AVENUE  
#15 VERNON-LOS ANGELES - 3365 E. 26TH STREET
- #16 ANAHEIM - 201 E. COMMERCIAL  
#17 SANTA ANA - 310 N. TOWNSEND  
#18 LAKE FOREST - 28531 TOWN CENTRE  
#19 ADELANTO - 12203 VIOLET RD.  
#20 SAN CLEMENTE - 116 RINGGON CT.  
#21 IRVINE - 16081 CONSTRUCTION CIR. WEST

PLANT **15** DATE **08/24/98** CUSTOMER **53600** SOLD **BEYLIK DRILLING INC** MAP **1764A2** TICKET **486999**

TX CD **S/W 190TH & NORMANDIE** DEAN **05-8013** **05-8013**  
DELIVERY ADDRESS & INSTRUCTIONS **TORRANCE** **(562)691-0703** **STARS / JTB**

Job Phone :  
  
**134 800.00 11:18 4Y38956**  
CPU NO. METER READING TIME TYPED TRUCK LIC NO.  
**1 8.00 518 1060 MORAN DANIEL SLURRY**  
LOAD NO. SLUMP TRUCK DRIVER **JOB START : 10:00**

TO JOB **1137** DRUM REVS. Job-site Cylinder Test: ☐ Yes  
ON JOB **1245** Water added on job at Customer's request: ☐ Yes  
START POUR **1255** gals to Full Ld. ☐ Yes  
FINISH POUR gals to 2/3 Ld. ☐ Yes  
LEAVE JOB gals to 1/3 Ld. ☐ Yes  
ARRIVE PLANT ADJ Meter ☐ Yes  
Additional water added to this concrete will reduce its strength. Any water added is at customer's own risk.

TIME ON JOB MIN CHECK #  
STAND BY MIN CHECK #  
RATE OF X'S PER MIN CASH #  
OVERTIME CHARGE PLANT MGR SIG  
4 min. per yd. free unloading time allowed.  
Additional unloading time charged at current hourly truck rate.

In event of default in payment of this ticket and it is necessary for seller to retain the services of an attorney by reason thereof, the buyer agrees to pay seller all costs and expenses incurred by reason thereof, including a reasonable attorney's fee plus 1% interest per month.

In consideration of Robertson's (Material Dealer) delivering this purchased material to a place designated by the undersigned, the undersigned hereby releases and agrees to indemnify and hold harmless said Material Dealer, their Agents, employees and drivers from all liability or claims for damage done by it or them to all real and personal property at the location indicated hereon as a result of the movement of said Material Dealer's vehicles or employees upon or about such property.

This release is intended to, and does cover all movements of all vehicles of said Material Dealer, at the location indicated hereon, from the time such vehicles leave the curb line to enter upon the property described hereon until they return to such curb line, regardless of the number and/or dates of such deliveries or movements.

LOAD QUANTITY	CUMULATIVE QUANTITY	ORDERED QUANTITY	PRODUCT CODE	MIX AND COMMODITY DESCRIPTION	UNIT OF MEASURE	UNIT PRICE	AMOUNT
10.00	10.00	10.00	3583	10.38 SLUR	BY		

## DEL. CHARGE

LOAD WEIGHT SSD

**WEIGHMASTER CERTIFICATE**  
THIS IS TO CERTIFY that the following described commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, who is a recognized authority of accuracy as prescribed by Chapter 2 (commencing with Section 12700) of Division 5 of the California Business and Professions Code, administered by the Division of Measurement Standards of the California Department of Food and Agriculture.

**Dennis Wheeler**  
ROBERTSON'S  
WEIGHMASTER

BY DEPUTY

**MAX ALLOWABLE WATER**

**DELIVERY TICKET**

TAX  
PREVIOUS BALANCE  
SUB TOTAL  
STAND BY CHARGE  
TOTAL

*[Signature]*

RECEIVED BY